



**US Army Corps
of Engineers**

Marine Design Center

SPECIFICATIONS

to

**DESIGN, CONSTRUCT,
TEST AND DELIVER**

ONE CRANE BARGE

&

ONE DECK CARGO BARGE

SOLICITATION # DACW61-03-R-0019

DEPARTMENT OF THE ARMY
Corps of Engineers
Marine Design Center
Philadelphia, PA

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CAUTION TO BIDDERS

All information required by the terms of the Solicitation must be furnished. MISTAKES OR OMISSIONS CAN BE COSTLY. Important items for you to check are included in but not limited to those listed below. This checklist is furnished only to assist you in submitting a proper bid. Check as you read.

☐ Are you registered in the Central Contractor Database? See DFARS Clause 252.204-7004 "Required Central Contractor Registration" in Section I of this solicitation?

☐ Are in compliance with the VETS-100 reporting requirement? See FAR 52. 52.222-37 "Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans in Section" in Section I of this solicitation?

☐ Have you acknowledged all amendments? Have you submitted your bid on the latest amended bid schedule?

☐ Have you completed the "Representations and Certifications" {Section K} portion of the Solicitation? Is your Contractor Establishment Code listed on the Standard Form 33?

☐ Is your bid properly signed by an officer of your company?

☐ If a bid guarantee is required, is it included with your bid and is it in the proper amount? {Usually 20 percent of the total bid price, including any options or additives.} If your bid guarantee is in the form of a bid bond, is the bond properly signed by both the bidder and surety (BONDING DOCUMENTS SHOULD BEAR AN ORIGINAL SIGNATURE AN OFFICER OF THE SURETY) and are all required seals affixed? A bid guarantee is required when your bid exceeds \$100,000.00. A late bid guarantee is treated the same as a late bid.

☐ Is the name in which you submitted the bid the same on your bid as on the bid bond?

☐ If required, have you entered a unit price for each bid item? {The solicitation will specifically state when this is necessary.}

☐ The Government may reject a bid as nonresponsive if it is materially and mathematically unbalanced as to price for any bid item or combination of items. A bid is unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

☐ Are decimals in unit prices in the proper places? Are your figures legible?

☐ Are the extensions of your unit prices, and your total bid price correct?

☐ Are all erasures or corrections initialed by the person signing the bid?

☐ Have you restricted your bid by altering the provisions of the solicitation?

☐ If you are a large business and your bid is greater than \$500,000 for service or \$1,000,000.00 for construction have you included your Sub-Contracting Plan in your bid package? (NOTE: PLEASE REFER TO SUBCONTRACTING PLAN IN SOLICITATION FOR GOALS).

☐ Is the envelope containing your bid properly identified that it is a sealed bid and does it contain the correct solicitation number and bid opening time?

☐ Will your bid arrive on time? See paragraph entitled "Late Submissions, Modifications, and Withdrawals of Bids" in the Instructions to Bidders {Section L} of the solicitation.

February 27, 2003

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SOLICITATION, OFFER AND			1. THIS CONTRACT IS A RATED UNDER DPAS (15 CFR 700)		RATING	PAGE 1	OF 1	PAGES 368
2. CONTRACT NO. DACW61-03-C-		3. SOLICITATION NO. DACW61-03-R-0019		4. TYPE OF SOLICITATION [] SEALED BID (IFB) [X] NEGOTIATED (RFP)	5. DATE ISSUED 17 Jun 2003	6. REQUISITION/PURCHASE NO. W25PHS-3090-8556		
7. ISSUED BY US ARMY ENGINEER DISTRICT, PHILADELPHIA CONTRACTING DIVISION WANAMAKER BLDG, 100 PENN SQ PHILADELPHIA PA 19107-3390			CODE DACW61	8. ADDRESS OFFER TO (If other than Item 7)		CODE		
			See Item					
TEL:					TEL:			
FAX:					FAX:			
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".								
SOLICITATION								
9. Sealed offers in original and <u>2</u> copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in <u>block 7</u> until <u>2:00 p.m.</u> local time <u>July 16, 2003</u> (Hour) (Date)								
CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.								
10. FOR INFORMATION CALL:		A. NAME WILLIAM A BAILEY		B. TELEPHONE (Include area code) (NO COLLECT CALLS) 215-656-6932		C. E-MAIL ADDRESS William.A.Bailey@usace.army.mil		
11. TABLE OF CONTENTS								
(X)	SEC.	DESCRIPTION		PAGE(S)	(X)	SEC.	DESCRIPTION	
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X	B	SUPPLIES OR SERVICES AND PRICES/ COSTS		2	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS			
X	C	DESCRIPTION/ SPECS./ WORK STATEMENT		152	X	J	LIST OF ATTACHMENTS	
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OFFER (Must be fully completed by offeror)								
NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.								
12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.								
13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232-8)								
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):				AMENDMENT NO.		DATE		AMENDMENT NO.
15A. NAME AND ADDRESS OF OFFEROR		CODE	FACILITY		16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)			
15B. TELEPHONE NO (Include area code)		15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - SUCH ADDRESS IN SCHEDULE.			17. SIGNATURE		18. OFFER DATE	
		<input type="checkbox"/>						
AWARD (To be completed by Government)								
19. ACCEPTED AS TO ITEMS NUMBERED			20. AMOUNT		21. ACCOUNTING AND APPROPRIATION			
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)					23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)		ITEM	
24. ADMINISTERED BY (If other than Item 7)			CODE	25. PAYMENT WILL BE MADE BY				
26. NAME OF CONTRACTING OFFICER (Type or Print)					27. UNITED STATES OF AMERICA		28. AWARD DATE	
TEL: EMAIL:					(Signature of Contracting Officer)			

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

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Design, Construct, Test and Deliver one CRANE BARGE and one DECK CARGO BARGE in accordance with the attached specifications:

<u>ITEM NUMBER</u>	<u>ITEM</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
0001	CRANE BARGE	1	VESSEL	XXXXX	XXXXXXXX
0001A	ENGINEERING AND SCHEDULING (The submittals required for "Engineering and Scheduling" are listed in Contract clause H02. This item is initiated by a Notice To Proceed issued by the Contracting Officer after Award of Contract.)	1	JOB	XXXXX	\$_____
0001B	CONSTRUCTION, TESTING, AND DELIVERY (The submittals required for "Construction, Testing, and Delivery" are listed in Contract clause H02. This item is initiated only by a Notice To Proceed issued by the Contracting Officer after satisfactory completion of Item 0001A. The Contractor may not start this item until he receives a Notice To Proceed for this item.)	1	JOB	XXXXX	\$_____
TOTAL FOR ITEM 0001		1	VESSEL	XXXXX	\$_____

<u>ITEM NUMBER</u>	<u>ITEM</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
0002	<u>DECK CARGO BARGE</u>	1	VESSEL	XXXXX	XXXXXXXX
0002A	ENGINEERING AND SCHEDULING (The submittals required for "Engineering and Scheduling" are listed in Contract clause H02. This item is initiated by a Notice To Proceed issued by the Contracting Officer after Award of Contract.)	1	JOB	XXXXX	\$_____
0002B	CONSTRUCTION, TESTING, AND DELIVERY (The submittals required for "Construction, Testing, and Delivery" are listed in Contract clause H02. This item is initiated only by a Notice To Proceed issued by the Contracting Officer after satisfactory completion of Item 0002A. The Contractor may not start this item until he receives a Notice To Proceed for this item.)	1	JOB	XXXXX	\$_____
TOTAL FOR ITEM 0002		1	VESSEL	XXXXX	\$_____
TOTAL FOR PROPOSAL EVALUATION (0001 & 0002)		XXX	XXXX	XXXX	\$_____

INSERT LOCATION OF THE FACILITY WHERE THE WORK WILL BE PERFORMED:

The Government may reject an offer as non-responsive if it is materially and mathematically unbalanced as to price for any bid item or combination of bid items. A bid is unbalanced when it is based on prices significantly less than cost for some work and prices, which are significantly overstated for other work. Refer to Section M for Evaluation and Award criteria.

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PART I - THE SCHEDULE - SECTION C

DESCRIPTION/SPECIFICATION/WORK STATEMENT

C000 PROJECT MANAGEMENT

C001 GENERAL MISSION STATEMENT

The Marine Design Center (MDC) of the U.S. Army Corps of Engineers (USACE) has issued this solicitation to acquire a non-propelled inland waters and intracoastal crane barge conforming to commercial standards. The vessel is intended to serve the U.S. Army Corps of Engineers, Rock Island District in support of its mission.

A. MISSION

The primary mission of the barge shall be to remove rock, sand and silt from the inland waterway system in and around the Rock Island District. The vessel shall also place riprap rock to stabilize the riverbanks.

B. NOMECLATURE

In the paragraph above, the vessel has been generically described as a crane barge. For the purposes of clarity and brevity, the term *barge* will be used throughout the remainder of this specification to describe the subject vessel. It is understood that the term *barge* will carry the same definition, meaning and intent as *crane barge* or *excavator barge*.

The Government will install a Caterpillar 375 Material Handler (excavator) on this vessel at a later date. The excavator will not be provided as part of this contract. The term *excavator* will be used throughout the remainder of this specification to describe the equipment to be installed on the subject vessel. It is understood that the term *excavator* will carry the same definition, meaning and intent as *material handler*.

C. ENVIRONMENTAL CONSIDERATIONS

The vessel shall be capable of operating year round on the navigable waters in, and adjacent to, the Rock Island District Boundaries.

C002 PRINCIPAL CHARACTERISTICS

The principal characteristics of the vessel are:

- Barge Length 150-feet molded
- Barge Beam 46-feet molded
- Barge Depth 10-feet at side
- Air Draft Requirement 17-feet maximum
- Spuds 3-42-feet LOA; powered; heavy wall cylindrical steel pipe construction; side entry type.
- Spud Wells 4-side entry gated type with energy absorbing fenders and lifting collar.
- Main Diesel Generator ~150-kw
- Excavator Crawler Path ~60-feet long; local deck reinforcement; curbed with timber pads
- Winches 4-electric barge winches; 4-hydraulic spud winches
- Deckhouse Housing welding shop, auxiliary generator room, gear locker, office, head, locker room, and day room with seating for 12.
- Fuel Oil Storage Tank 7500-gal independent tank in hull.
- Potable Water Tank 2000-gal independent tank in hull
- Hull Compartments Includes below deck machinery room, pump room, storage rooms and 3-ballast tanks at each end of the barge.

C003 DESIGN STANDARDS

The barge shall be designed and constructed in accordance with the latest edition and interpretations of the rules, regulations, requirements and standards of the Legislation, Regulatory Agencies and technical organizations listed as follows, or as stipulated in the respective specification clause:

- U.S. Army Corps of Engineers, Publication No. EM 385-1-1; “Safety and Health Requirements Manual” <http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm>
- American Bureau of Shipping (ABS) “Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways”.
- American Bureau of Shipping “Guide For Shipbuilding And Repair Quality Standard For Hull Structure During Construction”.
- National Shipbuilding Research Program Publication NSRP 0490, January 1998; “Industrial Standards for Hull Structural Penetrations Design Criteria and Details”.
- U.S. Coast Guard Regulation 46 CFR Subchapter C – “Uninspected Vessels” (but not for electrical design or installation).
- U.S. Coast Guard Regulation 46 CFR Subchapter J - “Electrical Engineering”.
- U.S. Coast Guard Regulation 46 CFR Subchapter S – “Subdivision & Stability”.
- U.S. Coast Guard, Navigation Rules, International and Inland.
- U.S. Coast Guard Regulation 33 CFR Part 164, Navigation Safety Regulations.
- API Specification 2C
- U.S. Public Health Service (USPHS) Publication No. 393, “Handbook on Sanitation of Vessel Construction”.
- Institute of Electrical and Electronic Engineers Standards, Publication No. IEEE-45 - “IEEE Recommended Practice for Electrical Installation on Shipboard”.
- Illuminating Engineering Society, “Recommended Practice for Marine Lighting”.
- National Electrical Code (NEC).
- NFPA 12 Standard on Carbon Dioxide Extinguishing Systems

C004 CLASSIFICATION AND CERTIFICATION

The Contractor shall be responsible for preparing necessary drawings and calculations, obtaining necessary regulatory body reviews and approvals, obtaining necessary inspections and surveys during construction and for the certification and classing of the vessel as follows:

- ABS classification for “Maltese Cross A-1 Barge, River Service, Reinforcement “B” with crane service notation to be placed in “column 5”.

The Contractor shall bear all expenses associated with the acquisition of the required classing and certification. The recommended ABS point of contact is Mr. Glenn Ashe who may be reached by phone, E-Mail or mail at: (703) 519-0801, Gashe@eagle.org, or 1421 Prince Street, Suite 200, Alexandria, VA 22314.

For the ABS certificate of classification, the owner shall be listed as “U.S. Army Corps of Engineers, Rock Island District”. The owner’s address for record shall be listed as CEMVR-OP-IM, 257 Grant Street, Peoria, IL 61603.

If the Contractor intends to launch, test, operate, or tow the vessel “out of class,” the Contractor must specifically advise ABS of such intent and incorporate any and all modifications required by that agency for such operation at no additional cost to the Government and with no additional contract time. Any such modification which, in the opinion of the COR, affects the arrangements, operability or suitability of the vessel shall be removed from the vessel by the Contractor at no additional cost or time and the vessel returned to new condition prior to Final Acceptance.

C005 VESSEL IDENTIFICATION

The vessel to be acquired through this solicitation has been assigned the following name and Marine Design Center hull and project number:

- MDC Hull Number 665
- MDC Project Number 2509
- Vessel Name DB-11

The vessel name has not been selected at this time. For the purpose of initial documents and drawing preparation, the title used shall be:

“THE MAZON REPLACEMENT”

C006 SCOPE OF WORK

A. CONTRACTOR'S RESPONSIBILITY

The contract shall consists of two phases:

Phase I	Engineering & Scheduling
Phase II	Construct, Test & Deliver

In accordance with the two phases, the Contractor assumes complete responsibility for designing, building, testing, and delivering the vessel to meet the requirements of this contract. Should the Contractor determine at any time that he is unable to fulfill those responsibilities, he shall notify the COR immediately of the problem experienced and his proposed manner of correction.

B. CONTRACT INTENT

It is intended that the Contractor shall be able to bid, and perform further design development of the vessel from the Concept Design provided by the Contract specifications and plans. The drawings represent the first stage of the design process.

The plans and specifications delineate a "Concept Design" for the subject vessel, which is the first stage in the design process. General arrangements, tankage, flotation and stability have been engineered sufficiently to verify feasibility, and to achieve an adequate level of confidence that the barge design can be developed to meet the performance, operational requirements and the design objectives of the U.S. Army Corps of Engineers. The arrangements as shown shall be strictly adhered to. Any requested alterations to the contractual arrangements shall be addressed in writing to the Contracting Officer. Written and explicit approval from the Contracting Officer must first be obtained prior to making any alterations the arrangement of the vessel.

The plans and specifications of this contract have been prepared in accordance with the referenced design standards. The plans and specifications have not been submitted to ABS, or USCG for approval. The Contractor shall prepare a Detail Design and submit this design for approval to ABS and USACE.

C. DETAIL DESIGN

During Phase II, Engineering & Scheduling, it is the Contractor's responsibility to provide appropriate design progression to minimize rework and to complete the Detail Design of the vessel based on the "Concept Design" developed for the vessel. The Detail Design is the basis for construction and shall include all necessary production details. It is always completed prior to the start of construction.

The Detail Design must be so clear in its intent that the features, characteristics, capabilities, design criteria, margins and success criteria of each component or system cannot be mistaken. The level of detail presented and documented by calculation in the final design shall be sufficient for all required regulatory approvals, and for the Government's quality assurance function.

Detailed submittals for review by Regulatory Agencies and ABS (for compliance with classification and certification requirements), inspection, testing, classification, and all associated costs are the responsibility of the Contractor.

D. DRAWINGS PROVIDED & REQUIRED

1. Contract & Reference Drawings

The contract drawings of the "Contract Design" as listed in Section J, Clause J01, Contract Drawings. The Contract Drawings are provided with these specifications for bid purposes as well as to develop the Detailed Design.

Also provided as part of this solicitation are Reference Drawings. Reference Drawings shall be used in conjunction with the Contract Drawings and the specifications to finalize the Detailed Design of each vessel.

It is intended that the Reference Drawings provide general guidance to the Contractor in the methodology intended to develop specific systems or design features as called out in this specification. The exact details presented in the Reference Drawings may not reflect the specific needs of each vessel. The Reference Drawings provided with the specification are listed in Section J, Clause J01

2. Drawings Required

The minimum drawings required to be completed during the Engineering and Scheduling phase of this contract in order to complete the Detail Design are listed in Section H, Clause H13, Engineering & Drawings. The requirements for developing the Detail Design drawings are delineated in Clause H03 with any specific requirements for structure or mechanical systems defined in their relevant contract clauses.

The requirements for as-built drawings of the completed vessel are defined in Section H, Clause H14, As-Built Drawings.

In addition to the drawings in Clause H13, the Contractor is also required to develop all drawings and associated calculations required for ABS Class.

C010 DEFINITIONS

The following definitions are applicable to phrases and acronyms used throughout this contract:

- KO - CONTRACTING OFFICER - A person with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.
- COR - Contracting Officer's Representative - a member of the contract management and quality assurance team authorized by the Contracting Officer to perform certain administrative and managerial duties. A copy of the COR's authority letter is furnished to the Contractor.
- USACE - Acronym for United States Army Corps of Engineers.
- MDC - Acronym for Marine Design Center.
- GFE - Government Furnished Equipment - Equipment, materials or components furnished by the Government to the Contractor for installation in the vessel.
- QC - Quality Control - Quality Control is a function of the Contractor. Refer to clause E03. Quality Assurance (QA) is a function of the Government.

C025 CONTRACTOR QUALITY STANDARDS

The Contractor shall be responsible for the construction of a complete and functioning vessel. The Contractor shall utilize the specified components so as to meet specification requirements utilizing construction and testing methods to ensure that the complete vessel shall conform to the intended design.

Inspection by the Marine Design Center is for the purpose of verifying the proper function of the Contractor's quality control measures and is not to be used as a substitute for quality control by the Contractor.

A. STRUCTURAL MATERIALS

Unless otherwise specified or noted on the Contract Drawings, all structural hull material shall be in accordance with the following specifications:

American Bureau of Shipping (ABS), "Rules for Building and Classing Steel Vessels" and "Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways".

Welding Materials - ABS "Approved Welding Electrodes, Wire-Flux and Wire Gas Combination."

B. STANDARD PARTS AND MATERIALS

All articles, fittings, equipment, machinery, supplies, and materials used in the construction and outfitting of the vessel shall be the highest grade, free from defects and imperfections, unused and, be the standard product of reputable manufacturers, to the maximum extent practicable. Any material not specified shall be the best of their kind for the purpose intended.

Materials specified herein to meet the requirements of standard specifications published by national authorities shall conform with the respective editions, including amendments, specified. No salvage materials shall be used in the work.

C. WORKMANSHIP

All labor shall be especially skilled for each kind of work and under competent direction.

In engaging one kind of work with another, marring or damage of previously acceptable construction shall be cause for rejection. All parts of the vessel intended to join or bear upon other parts shall have complete and solid contact and shall fit together without excessive cold work during construction. Shims or liners shall not be used for the purpose of overcoming a bad fit. Lightening holes may be punched or flame-cut and all edges shall have burrs removed. Holes in members having sharp curvature shall be avoided.

D. WELDERS

Only welders who have successfully passed qualification tests accepted by the American Bureau of Shipping or other regulatory bodies acceptable to ABS shall do all welding under this contract.

The Contractor shall bear the expense of conducting these tests and shall certify, by name to the COR, welders who have successfully passed the prescribed tests and hold current, valid certifications.

The Contractor shall require any welder to repeat these tests when in the opinion of the COR, the work of the welder indicates a reasonable doubt of his proficiency. In such cases the welder shall be re-certified as above if he successfully passed the retest; otherwise, he shall be disqualified until he has successfully passed the retest.

The Contractor shall maintain records of each welder's certification during the course of the contract. The records are to be available for examination upon request of the COR.

E. WELDING

All welding shall be in accordance with the current rules of the American Bureau of Shipping. All welding equipment used on the work shall be of a modern type subject to close control. The electrodes used throughout the work shall be suitable for use with the parent metal at each weld, and be approved by ABS.

Welding procedures, as to direction, length, numbers and sequence of beads, shall be carefully planned to minimize lock-up stresses. Care shall be exercised to produce smooth even beads, especially on all exposed plating and fittings. Beads shall be ground where directed by the COR.

The Contractor shall employ appropriate welding procedures and grounding connections to preclude the possibility of anodic erosion of the hull after launching.

F. INSTALLATION

Materials and equipment shall be installed in accordance with the approved recommendations of the manufacturer, and in compliance with the contract documents. Workmen skilled in this type of work shall accomplish the installation.

G. PLATE FAIRNESS

Steel plating shall be installed using proper welding procedures and sequences to insure fair, undistorted plating panels. The use of filler materials to surface unfair areas is not acceptable.

Maximum allowable plating distortion is depicted in the "Guide For Shipbuilding And Repair Quality Standard For Hull Structure During Construction" from ABS. Distortion shall not exceed the amounts in this guide.

H. CONSTRUCTION STANDARDS

All material, machinery and equipment shall be new, of current manufacture and suitable for the marine service intended. Spare parts and service shall be readily obtainable.

All material, unless otherwise specified in these specifications or in the drawings, shall be of commercial quality to ASTM, ANSI, or SAE specifications.

During construction and before delivery, the Contractor shall be responsible for protection of all material, equipment, etc., intended for the vessel.

The overweight tolerance of members shall be within the limits defined by the specifications of the American Society for Testing and Materials.

All materials shall be free of imperfections due to manufacturing processes and from defects, which adversely affect appearance or serviceability.

All sharp edges or projections, which constitute a personnel hazard, shall be removed or ground smooth. All notches shall have a radius to prevent stress concentrations.

Where aluminum must be attached to dissimilar metals or between dissimilar alloys of aluminum, fasteners shall be of stainless steel of an approved design with insulation as required to eliminate metal-to-metal contact.

All galvanizing shall be done after fabrication by the hot dip process, and the zinc shall be not less than 98% pure. In instances where some types of metals cannot be hot dip galvanized, zinc silicate coating may then be substituted.

C100 SCIENTIFIC

C105 HULL GEOMETRY

The rake profile and hull geometry shall be as shown on the Contract drawings.

The barge shall be two way double raked, flat-bottomed and wall-sided with 12" bilge radius, 6" gunwale radius all around, 18" corner radius and 10'-0" rake radius.

The deck shall have 4" straight-line camber.

C115 WEIGHT ESTIMATE & CG CONTROL

A. LIGHTSHIP WEIGHT & CG

The conceptual lightship weight data shall be used for information purposes only.

Magnitude	~1020-KP
VCG, above vessel baseline	~6.9-FT
LCG, fwd midships towards house	~3.75-FT

B. WEIGHT & CENTER OF GRAVITY ESTIMATES & MONITORING

The Contractor shall implement a careful independent weight estimating and monitoring program.

The Contractor shall develop and refine light ship weight estimating during the design process of the vessel.

If the anticipated draft and trim of the vessel are adversely impacted by unpredicted weight growth, the Contractor shall be obligated to determine the cause of the weight growth and take remedial action to adjust the weight and CG to ensure that the mission requirements of the vessel are met.

C. WEIGHT ESTIMATE

During the Engineering & Scheduling Phase of the contract, the Contractor shall prepare a detailed weight estimate for the vessel based on selected machinery/equipment and take-offs of materials. Weights and centers of gravity shall be documented in a spreadsheet type format using a system similar to the MDC Work Breakdown Structure (WBS), which will be provided at contract award.

The detailed weight estimate shall be complete with the longitudinal, transverse, and vertical location of the center of gravity of all items included in the estimate.

The Contractor shall maintain an updated weight estimate during the Engineering Phase. A revised (lightship) weight estimate shall be submitted to MDC at the conclusion of the Engineering Phase to ensure that the mission requirements of the vessel are met.

For the purposes of the stability analysis, the weight of the excavator on the deck shall be included in the vessel deadweight. The contractor shall coordinate directly with Caterpillar to obtain the necessary weight information for the CAT 375 MH. The Government will install the excavator on the vessel by the Government at a later date. The contractor is responsible for obtaining the necessary information from Caterpillar to facilitate their completion of the final design of the vessel. The excavator will not be provided as part of this contract.

D. DEADWEIGHT SURVEY

Upon completion of all work, a deadweight survey shall be conducted of the vessel in accordance with USCG requirements to determine the lightship displacement (weight), the longitudinal center of gravity and the transverse the center of gravity.

This information, along with the estimated lightship vertical center of gravity, shall be used to finalize the stability analysis.

C125 HYDROSTATICS & CURVES OF FORM

Hydrostatics calculations shall be performed for the vessel in fresh water at all possible operational drafts including lightship.

The calculations shall be in tabular form and completed in 1-inch increments for drafts ranging from lightship to full load. The tabulated hydrostatic curves may be plotted on a standard D size drawing or 8-1/2 inch by 11-inch paper. Resulting calculations shall be presented in graphic form on a grid background. The curves are to include as a minimum:

- Displacement in fresh water, full and molded
- Center of buoyancy (LCB, VCB)
- Tons per inch immersion (TPI)
- Longitudinal center of floatation (LCF)
- Transverse and longitudinal metacentric heights (KM_L , KM_T)
- Moment to trim one inch (MT1")
- Block, prismatic and water plane coefficients (C_b , C_p , C_w)

The hydrostatics shall be performed using the GHS computer software (suggested source is Creative Systems Inc., Port Townsend, WA (360) 385-6212). The hull definition file (or *.gf file) shall be provided in electronic format (on a 3.5 inch disk or CD ROM) with the hydrostatics submittal.

C130 COMPARTMENT CAPACITIES

Tank capacity tables shall be provided for all ballast and consumables tanks.

Sounding tables in gallons per inch shall be provided for all tanks in their final configuration. The sounding tables shall be presented in tabular form with one tank per page on 8 1/2" x 11" paper using the GHS computer software. Each table shall include the identity of the tank (as labeled on the drawings), its location in the vessel and the center of gravity (longitudinally, vertical and transversely) of the fluid at each sounding level. The compartmentation definition files shall be submitted in electronic format with the sounding tables.

C150 DAMAGED STABILITY

The vessel shall meet a one compartment damaged stability standard in the most critical transit loading condition where with any one compartment flooded, the vessel shall maintain positive righting arm and all parts of the hull above the margin line remain above the flooded waterline. The margin line shall be 3 inches below the main deck edge.

Damaged stability calculations shall show equilibrium water lines, curve of righting arm versus heel angle in 5-degree or less increments to capsize angle for each flooded compartment. The freeboard shall be reported at the four deck corners, and at each deck knuckle for each damaged condition.

The Contractor shall prepare a damaged stability analysis for the vessel during the Engineering Phase of this contract verifying compliance with this criterion. Any calculations showing a failure to meet this criteria shall be reported in a timely manner to the COR with recommendations for correction. The analysis shall be performed using the GHS computer software and all run files and macros used in calculating the damaged stability shall be submitted with the analysis in electronic format. The analysis shall be repeated using the lightship weight determined by the inclining experiment after completion of the vessel (prior to Final Acceptance).

The damaged stability calculations shall be presented in report form with a cover sheet complying with the drawing standards and including a drawing type title block. The report shall include a table of contents, summary, explanation of all assumptions and clear definition of origins and units used, and the finished calculations.

C155 INTACT STABILITY

A. GENERAL

This analysis shall determine the maximum allowable vertical center of gravity (KG) for the loaded barge over a range of operating drafts, which are in compliance with the stability criteria below.

B. STABILITY CRITERION

Intact stability calculations shall be performed for the vessel in accordance with U.S. Coast Guard Regulation 46 CFR Subchapter S, for protected routes or partially protected waters. Relevant criteria shall be as follows:

1. Lifting Criterion 46 CFR 173.20

In any loading condition of the vessel, and for any combination of hook load and excavator radius, the vessel shall have an area under the righting arm curve of:

At least 10 foot-degrees of righting energy to the smallest of the following angles:

- Angle of Maximum Righting Arm
- Angle of Down flooding
- 40-degrees

2. Deck Cargo Barge Criterion 46 CFR 174.015

For operation on rivers and partially protected waters, such as on lakes, bays, sounds and Great Lakes summer service, any condition of loading of the vessel shall have the same righting energy requirement as the lifting criterion (46 CFR 173.020).

A maximum deck cargo VCG vs. draft curve shall be provided for the vessel over the entire range of operating drafts.

3. Weather Criterion 46 CFR 170.170

A minimum metacentric height (GM) shall be defined vs. vessel draft based on a wind heeling moment and heel limitation to submergence of half the freeboard.

C. CALCULATIONS

The calculations shall be performed using the GHS computer software. All run files and macros used in the calculations shall be submitted with the analysis in electronic format.

The intact stability calculation shall be presented in report form with a cover sheet complying with drawing standards and including a drawing type title block (see contract Clause H13). The report shall include a table of contents, summary, explanation of all assumptions and clear definition of origins and units used and the finished calculations.

D. TRIM & STABILITY BOOKLET

The Contractor shall prepare a Trim and Stability booklet for the vessel during the Engineering Phase of the contract documenting compliance with the criteria. The booklet shall assist the Master in assessing the stability and anticipated inclinations of the vessel, by include the following:

- Instructions to the Master.
- Tank capacities.
- Hydrostatics data.
- Plots of maximum KG vs. Draft.
- Procedure for trim and stability calculations.
- Calculated loading conditions.

The Contractor shall verify that the vessel can achieve a 17-foot air draft in the following condition:

- Ballasted down.
- 10% consumables.
- Spuds stowed on deck.
- Material handler machine not on board.
- No special fixed ballast.

Thirty days prior to Final Inspection of the vessel, the Contractor shall provide a final Trim and Intact Stability Booklet for that vessel determining loading procedures to maintain a stable platform throughout the loading process. The lightship weight of the vessel shall be that determined from the Inclining Experiment.

C170 DRY DOCKING PLAN

The Contractor shall develop a dry docking plan for the vessel. The dry docking plan shall be developed to show the blocking for dry-docking. It shall show all major hull structure on the bottom, all hull penetrations, all transverse and longitudinal bulkheads connecting with the bottom shell, the sea chests, the transducer wells, any anodes, and other features, which could interfere with the setting and shifting of the blocks.

The dry docking plan shall include an alternate blocking arrangement to allow for the servicing of all areas of the bottom of the vessel.

The plan shall identify the size (foot print) of blocks supporting the hull and the maximum block loading (KP/foot-squared). The blocks shall be located to evenly distribute the loads and avoid undue stresses within the hull structure. Blocks shall be located in way of main structural longitudinal and transverse bulkheads wherever possible. Where blocking is located on frames other than bulkheads, appropriate docking brackets shall be designed and installed within the hull. Docking bracket details shall be shown on the structural drawings. If the end(s) of the vessel are unsupported, the Contractor shall provide calculations with drawing submittal showing that the hull strength is adequate to handle the cantilevered load.

The dry docking plan shall also include the following:

- Lightship weight as determined by the Inclining Experiment and its CG.
- Full load weight as determined by the as-built Stability Calculations.

C180 NOISE AND VIBRATION

A. INTRODUCTION

Control of noise and vibration are paramount to the functionality of this vessel. Every effort shall be made to control noise and vibration. The Contractor shall be responsible, at his own cost, to meet the noise and vibration protection limits described herein.

The problems of noise and vibration on vessels are quite complex and can create conditions harmful to personnel, equipment and the vessel itself. Noise and vibration generated in one area of the vessel are transmitted by a variety of transmission paths to other areas of the vessel.

The barge shall generate considerable levels of noise and vibration. The equipment shall generate both direct airborne and structure-borne noise, which shall be transmitted through the structure and converted to airborne noise as it vibrates about the vessel.

Control measures are necessary to protect personnel and ensure safe operation of equipment and vessel. Furthermore, control measures are usually successful and cost effective if incorporated at the design stage.

After construction is complete, a vessel noise survey shall be conducted similar to those by NCE and in accordance with Section E of the Contract.

B. NOISE CRITERIA

The following noise levels shall not be exceeded within a given space:

1. Hull Level

Stores	80 dB (A)
Lower Engine Room	110 dB (A)

2. Main Deck Level

Exterior Deck	75 dB (A)
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3. Deckhouse

Office	65 dB (A)
Day Room	65 dB (A)

C. NOISE AND VIBRATION CONTROL

Some control measures that shall be considered by the Contractor in meeting the criteria are as follows:

- Effective noise barrier around high noise spaces to prevent noise transmission to adjacent spaces, and sound absorbing material around high noise spaces, to reduce contribution of reverberant noise within the space.
- Installing vibration isolators for the diesel generators and all rotating machinery such as pumps and fans in order to reduce noise and vibration transmission through the structure.
- Flexible mounting of ventilation and other service lines.
- Ensuring that all pipe and duct joints are tight and that all penetrations through spaces are sealed.
- Use of low noise components.
- Tighter tolerances.
- Ensure that the impedance of the foundation supporting the resilient mount is 10 times the impedance of the resilient mount.
- Ensure that the forcing frequencies are not within +/- 25% of the foundation natural frequencies.
- Ensure that the resilient mount/vibration isolator natural frequencies are not greater than 50% of the forcing frequencies.
- All diesel exhaust lines and exhaust silencers shall be mounted using vibration isolators.
- Installing acoustic louvers on all engine and generator room ventilation openings.

C185 TESTS AND TRIALS

This vessel and its component parts shall undergo testing and trials in accordance with Clause E05.

C200 ARRANGEMENTS

C205 OUTBOARD PROFILE

The configuration of the vessel profile shall be as shown on the contract drawings.

The vessel shall have a low profile to satisfy the low bridge clearance requirements imposed on the Illinois Waterway system.

The vessel operational air draft shall be capable of being lowered by ballasting to 17-feet or less in the burned out condition with the spuds stowed on the deck.

C215 GENERAL ARRANGEMENTS

The general arrangements of the vessel shall be as shown on the contract drawings.

A. MAIN DECK

The vessel shall be arranged to provide readily accessible machinery and equipment to facilitate operation, maintenance, and inspection.

Provisions shall be made for the removal of the generator and other major equipment through hatches or other access. Where equipment, machinery or furnishings have not been shown on the drawings, the Contractor shall provide locations and include that information on subsequent revisions of the above drawings.

Deck obstructions shall be minimized and wherever possible clustered near major unavoidable obstruction, such as the spud well or the deckhouse.

B. BELOW DECK

Large open-framed below deck storage areas serviced by large overhead hatches and chain hoist trolley monorail system shall be provided.

Ballast tanks shall be provided to adjust vessel trim when in transit and prior to load handling.

Cofferdams shall be provided around the spud wells.

Machinery and equipment shall be located with sufficient space around them for maintenance and removals clearance.

Ballast piping shall be clustered near structural obstruction and away from passageways and watertight door landings.

C300 STRUCTURE

C301 GENERAL

It is the responsibility of the Contractor to prepare the Detail Design with plating, bulkhead and framing construction, and weld details and submit them to ABS for approval. Production details of all major penetrations in principle hull structure shall be provided on the ABS approved drawings.

The Contractor shall submit calculations required to determine all principal hull, deck, and bulkhead scantlings. The Contractor shall also submit calculations required to determine foundation scantlings, rigging components and lifting pad eyes. Structural calculations shall be submitted with the associated structural drawings. Structural drawings will not be reviewed without accompanying calculations.

Excavator crawler path loadings shall be determined from the Caterpillar Hydraulic Excavator 375 MH at worst loading condition and boom azimuth.

The crawler path loading shall be reviewed and accepted by MDC prior to the structural design of the crawler path local structure.

C305 HULL STRUCTURE

A. GENERAL

The hull shall be of all welded steel construction and divided into watertight compartments with transverse bulkheads, in accordance with the contract drawings.

All hull steel shall conform to ASTM specification A36-81a for structural steel and be certified by ABS. All welding and weld sizes shall be in accordance with the applicable standards of the American Bureau of Shipping.

The shell and main deck plating shall be constructed of longitudinal strakes of lengths consistent with accepted practice for hulls. All seams shall be connected with full penetration welds.

Hull plating transverse seams may not fall within 6 inches forward or aft of flat-of-bottom tangent line.

The transverse framing in the hull shall be open (minimize diagonals) as much as possible to facilitate access in storage areas and capstan space.

Main deck design uniformly distributed loading shall be 2000-PSF. Structure shall be sized in accordance with the latest ABS rules including RCN 6 January 2002 Steel Vessels for Service on Rivers and Intracoastal Waterways.

The rake structure on the working end of the barge shall be reinforced facilitate grounding and crawl on/crawl off operations. The design pressure loading on the rake plating shall be 5000-PSF resulting in heavy framing and plate thickness of ~1-inch in way of the working rake.

Corner, bilge, head log and stern log plating and stiffeners shall be heavily reinforced to withstand inland rivers workboat duty.

The rake structure on the working end of the barge shall be reinforced to facilitate riverbank and bottom grounding from crawl on/crawl off operations and accidental contact with the excavator bucket during digging operations.

The design pressure loading on the rake plating shall be 5000-PSF resulting in heavy framing and plate thickness of ~1-inch in way of the working rake.

B LONGITUDINAL STRENGTH ANALYSIS

The contractor shall perform a longitudinal strength analysis to verify that the primary hull girder moment and shear in the ballasted condition of vessel loading is inside the allowable envelope, which shall be provided along the entire length of the hull.

C. PENETRATIONS

When penetrations are made in watertight bulkheads, shell or deck, the plating shall be restored to watertight condition in accordance with the ABS Rules referenced in contract Clause C003. When penetrations are made in oil tight bulkheads or decks, the plating shall be restored to oil tight condition in accordance with the ABS Rules referenced in contract Clause C003.

All such penetrations and deck openings shall be suitably designed and reinforced in accordance with the National Shipbuilding Research Program Publication NSRP 0490 referenced in contract Clause C003.

All keels shall be installed on thickened insert plates with headers below the deck.

D. INSERT PLATES

All deck fittings and deck equipment shall be mounted on insert plates welded continuously into the deck with bulkheads, headers or brackets below. Plates shall have 6-inch radius corners and extend a minimum of 6 inches beyond the item in all directions.

E. OVERBOARD DISCHARGES

All overboard discharge openings through the shell plating above the waterline, shall be located at least 6 inches above the full load waterline.

All discharge penetrations shall not extend beyond the hull plating and shall be of extra strong pipe welded to a circular insert shell plate. Insert plates shall be of equal or greater thickness than the wall of the attached spool piece. No insert plate shall be less than the hull plate in the area of the penetration plus 1/8th inch.

Any pipe penetrating the hull below the full load water line shall be fitted with schedule 80 spool pieces and sea valves. The inboard end of the spool piece shall have a 150 lb pipe flange to bolt to the sea valve. The sea valve shall be located less than 6 inches from the hull opening.

Openings shall be located well clear of draft marks and other hull markings as described in Clause C460.

F. LIFTING PADS

Lifting pads shall be provided throughout the generator room for the lifting of heavy equipment requiring removal for repair. Pads shall also be provided over soft patches or removal hatches to facilitate equipment removal from below deck.

Structure in way of the lifting pads shall be stiffened to prevent undue deflection under expected loads. The structure shall be designed with a factor of safety not less than 5 based on the ultimate strength of the material. Calculations shall be performed and submitted for lifting pads and support structure intended to lift weights in excess of 500 lbs. Lifting pads rated for 500 lbs or more shall be shown on the structural drawings.

G. FRAMING FOR DOORS, WINDOWS, HATCHES, & MANHOLES

All door, window, hatch, and manhole openings shall be provided with headers as necessary to transfer the hull and local structural stresses around the openings. The headers shall be shown on the structural drawings. The requirements for the doors, windows, hatches, and manholes are in accordance with contract Clause C415.

C315 DECKHOUSE

The Contractor shall design and construct a steel deckhouse meeting the requirements of the ABS River Rules (Part 3, Section 6.17) as shown on the Contract drawings.

The Contractor shall develop a drain system for the house and welding shop top during the Final Design Phase.

C317 SERVICE STRUCTURES

A EXCAVATOR STOPS

Portable and fixed stops for the excavator in way of the crawler way curbs shall be provided. The forward portable stops shall be compact design with same width of crawler pad and height equal to excavator drive sprocket radius.

Provide and install enclosure plates on the top, aft sloping side and sides of the portable excavator stops to prevent the entrance of rocks and debris. The fit-up with the deck shall be as tight as possible.

B CRAWLER WAY CURBS

The crawler way curbs shall be provided as shown on the contract drawing for the crawler excavator width for the Caterpillar 375 MH. Approximately, a few inches of clearance shall be provided between the crawler pads and the curbing.

Four (4) deck mounted pad eyes for excavator fastening during transit shall be provided and installed in a suitable location.

C325 SEA CHEST

Pipe well-type sea chest and enclosure, of comparable strength to the adjoining piping, shall be provided as shown on the contract reference drawing. The sea chest shall be sized to provide water to the fire water system, and the ballast system. The suction pipe and pump shall be as low in the vessel as possible, being totally submerged at the lightship waterline and even keel ready draft waterline.

The sea chest shall be accessible from the main deck in the Welding Shop through flush mounted watertight clean out hatch. The hatch cover shall withstand the maximum design pressure of the well, assuming there is a major blockage in the basket and strainer plate.

The sea chest shall be fabricated of schedule 100 steel pipe of suitable diameter extending from the bottom shell to the deck in accordance with Reference Drawing 577-D325-01, SEACHEST INSTALLATION & DETAILS.

A deck-removable strainer basket with ½ inch copper-nickel strainer plate bottom shall be provided onto the hull opening for sea chest. The strainer plate shall have an open area as required by ABS and shall be flush on the outboard side. The basket is held in place by reach rod and double bolt strong back top attachment.

Extra strong pipe couplings shall be welded to the sea chest(s) for attachment of pump suction piping, which shall attach be as low as possible on the sea chest. The sea chest shall be equipped with a 2-inch vent and gate valve.

C330 FOUNDATIONS

Suitable foundations shall be provided under all units of equipment, machinery, tanks, deck fittings, winches, and other heavy concentrations of weight to properly mount the item, to distribute the loads to the structure, and to avoid undue stresses and vibrations in the hull.

Foundations shall be fabricated from structural steel shapes and plates. Foundation members shall be lightened and openings provided to permit access to all parts of the foundation for inspection, drainage, and maintenance. Web plates of foundations shall be stiffened at holding-down bolts and other points of load concentration.

Bolting surfaces on foundations shall be made coplanar by the use of machined steel shims or poured-in type chocking material. Bolt holes in foundations shall be templated from the unit.

Foundation top flanges/plates shall be level.

All equipment bolted to foundations shall have mounting bolt holes accurately bored (not burned) and reamed to provide a no-slop fit.

The threaded portion of the bolts shall be clear of the foundation or equipment pads, and heavy flat and lock washers used under all nuts. Elastic stop nuts may be substituted for lock washers.

Where dripping of water or oil can be expected, the top plates of foundations shall be tight and project slightly beyond the edges of bedplates or bases of units to be supported. Flat bar shall be seal-welded around the edges of the top plates to retain any leakage of oil or water and quick disconnect fittings provided for drainage.

Unless otherwise specified by the manufacturer, Grade #5 fasteners shall be used for all bolted connections and equipment and machinery hold downs. The threaded portion of bolts shall be clear of the foundation or equipment pads, and heavy flat and lock washers used under all nuts. Elastic stop nuts may be substituted for lock washers.

C400 OUTFIT

C406 COATING SYSTEM

A. SURFACE PREPARATION

Surface preparation for all structural steel shall be in accordance with Steel Structures Painting Council Standards, SSPC-SP10-85 (Near White Metal Blast) throughout. Profile after blasting shall be 1-1/2 to 2-1/2 mils in depth and jagged. All mill scale, weld spatter, dirt, oil, and grease shall be removed.

Immediately upon completion of surface preparation, all steel shall be coated with the coating system described in the following.

Contractor may limit initial coating to base coat only. In this case, or where pre-construction primer is used prior to application of subsequent coats, all steel shall be either water blasted or sand-swept clean (light blast) and any damaged areas repaired prior to application of the remainder of the system. All areas needing repair shall be cleaned to bare metal, spot blasted to restore profile, and re-coated with the base coat.

B. PAINT REQUIREMENTS

Paint shall be delivered in sealed containers with labels to indicate manufacturer, contents, manufacturing date, and any special instructions. Paints and painting materials shall be stored under cover and protected from extreme temperatures.

Paints shall not be used if they have exceeded the closed shelf life or pot life recommended by the manufacturer. Additionally, paints shall not be applied in weather or humidity conditions not recommended by the manufacturer.

C. APPLICATION OF COATINGS

Surface preparation and paint application shall be in strict compliance with the coating manufacturer's recommendations. The Contractor shall take particular care to insure that coating system requirements are met in all areas, especially those difficult to coat, such as flange undersides. All painting on both the interior and exterior surfaces below the main deck shall be accomplished prior to launching of the vessel.

D. COATING SYSTEM

The system is composed of the following coating types:

- Self priming epoxy base coat
- Flake reinforced abrasion resistant epoxy barrier coat
- Fade resistant urethane top coat

A Paint Schedule shall be developed and submitted to MDC during the Engineering Phase of the contract.

E. PRE-QUALIFIED COATINGS

Coating systems from Ameron, BLP Mobile, and International Paint have been pre-qualified for the system above. The Contractor may select any of these systems at his discretion. However, systems may not be “mixed” (i.e. mixing an “a” with a “b” is not acceptable). The specific coating designations to be used are as follows:

1. Surface Tolerant Base Coat
 - Ameron Amercoat 370
 - Amercoat 235 (formerly Devoe Bar Rust 235)
 - BLP Mobile MOPOXY-PLUS
 - International INTERTUF 262
2. Abrasion Resistant Epoxy Barrier Coat
 - Ameron Amerlock 400GF
 - Amercoat 238 (formerly Devoe Devguard 238)
 - BLP Mobile MOPOXY-PLUS FG
 - International INTERSHIELD 350
3. Fade Resistant Urethane Top Coat
 - Ameron Amercoat 450 HS
 - Amercoat 369 (formerly Devoe Devthane 369)
 - BLP Mobile MOTHANE HS-900
 - International INTERTHANE 990 HS

F. NUMBER OF COATS

The number of coats is not specified. The Contractor is required to provide the number of coats necessary to attain the DFT thickness required in the schedule below. Thickness applied per coat may not exceed the manufacturer's recommended maximum thickness. Each coat shall be listed in the Paint Schedule.

The “under coats” of all multiple coat applications shall be “contrast tinted” to ensure complete coverage of successive coats.

G. COATING "TYPE" AND DFT SCHEDULE

All areas of the vessel shall be coated in accordance with the following schedule:

1. Hull Exterior (below the main deck)

All steel surfaces shall be coated with base coat at 8 mils DFT minimum.

All hull surfaces shall be over coated (over the base coat) with barrier coat at 12 mils DFT minimum (not including base coat).

The interior of the sea chest(s) shall be coated in the same manner as the hull exterior.

Lettering and numerals on the hull exterior shall be over coated (over the barrier coat) with a top coat at 2 mils DFT minimum.

2. Main Deck

All steel surfaces shall be coated with a base coat at 8 mils DFT minimum.

All surfaces shall be over coated (over the base coat) with barrier coat at 12 mils DFT minimum (not including the base coat).

Non-skid garnet additive shall be added to the barrier coat.

Deck area shall be over coated (over the barrier coat and non-skid garnet) with top coat at 4 mils DFT minimum.

3. Deck Fittings

All deck fittings shall receive a base coat at 5 mils minimum and be over coated (over the base coat) with a barrier coat at 5 mils DFT minimum. A top coat at 2 mils minimum DFT shall overcoat the barrier coat.

4. Compartment Voids, Inner Bottoms

All steel surfaces shall be over coated with base coat at 8 mils DFT minimum.

5. Exterior Decks (Above the Main Deck)

All steel surfaces shall be coated with base coat at 8 mils DFT minimum.

All surfaces shall be over coated (over the base coat) with barrier coat at 12 mils DFT minimum (not including base coat).

Non-skid garnet additive shall be added to the barrier coat.

6. Exterior Deckhouse, Spudwells, & Railings

All steel surfaces shall be coated with base coat at 8 mils DFT minimum.

All steel surfaces shall be over coated (over the base coat) with top coat at 4 mils DFT minimum (not including base coat).

7. Interiors of Spill Containments

All steel surfaces shall be coated with base coat at 8 mils DFT minimum.

8. Machinery Space & Store Room

All steel surfaces shall be over coated with base coat at 6 mils DFT minimum.

All surfaces except surfaces to be covered with sheathing shall be over coated (over the base coat) with a top coat at 2 mils DFT minimum.

9. Deck House Interior

All steel surfaces shall be coated with base coat at 6 mils DFT minimum.

All surfaces except surfaces to be covered with sheathing shall be over coated (over the base coat) with a top coat at 2 mils DFT minimum.

10. Interior Decks

All steel surfaces, except those receiving a deck covering, shall be coated with base coat at 5 mils DFT minimum.

All steel surfaces shall be over coated (over the base coat) with a top coat at 2 mils DFT minimum.

11. Ballast Tank

The interiors of these tanks shall be over coated with base coat at 8 mils DFT minimum.

12. Fuel Oil Tank

The interior surfaces of these tanks shall be maintained with a coat of mineral oil applied immediately following surface preparation.

H. COATING COLOR SCHEDULE

Colors shall conform to Federal Standard No. 595B COLOR BOOK. The book as well as individual paint chips (3" x 5") shall be procured from the General Services Administration/Specifications Section as follows:

GSA/FSS/Specification Section
470 L'Enfant Plaza East SW, Suite 8100
DC 20407

Phone: (202) 619-8925
FAX: (202)619-8978 Washington,

The coloring schedule shall be as follows:

AREA	COLOR/FS595 NUMBER
Hull Exterior	Black/17038
Hull Markings	White/27880
Spud Markings	White/27880
Exterior Decks	Deck Red/10776
Deck Fittings	Yellow/13591
Deckhouse Exterior	Old Ivory/17855
Deckhouse Markings	Black/17038
Spudwells Exterior	Black/17038
Spuds	Black/17038
Hand Rails & Stair Rails	Black/17038
Safety Tread Nosing	Yellow/13591
Hull Compartments	Gray/16473
Deckhouse Interiors	White/17925
Interior Decks	Gray/16473
Tanks	Gray/16473
Insignia Base Plate	Striping Red/11350
Name Board Letters	Gold/23594
Name Board Background	Blue/25102
Fuel Oil Fill Station	Yellow
Lube Oil Fill Station	Black
Potable Water Fill Station	Light Blue
Waster Oil Station	Brown

On exterior deck areas, both under coat (barrier coat for hull and base coat for deck other than hull) and top coat shall be the same color.

All top coating shall be thick enough to provide complete opaque color coverage. Thickness increased over the DFT minimums required above shall be provided if required for opaque color coverage.

All items of machinery and equipment shall be painted with the individual manufacturer's standard colors. Painted surfaces damaged in handling and installing the equipment shall be repainted.

All unpainted machinery items having black cast or carbon steel surfaces shall be given a prime coat and finish coat of gray machinery enamel.

I. FINAL INSPECTION OF PAINTING

The Contractor is responsible for delivering the vessel with all painted surfaces in sound condition, and in accordance with this specification.

Prior to launching of the vessel, all interior and exterior painting shall be thoroughly inspected. If there are any defects or damage in the coating of the vessel, the Contractor shall repair the coating to restore the integrity of the paint system, and to meet the requirements of this specification. All damage shall be cleaned to bare metal, spot blasted to restore profile, and re-coated with the entire system schedule.

The vessel shall not be launched until:

The painting warranty and documentation, as required in paragraph J below, has been provided to the COR. The warranty and documentation must show compliance with this specification in all areas, and all readings taken.

The painting has been inspected to the satisfaction of the COR. Contractor must provide warranty and documentation prior to MDC inspection.

If outfitting is required after launching, all interior and exterior painting shall be re-inspected prior to Provisional Acceptance, and the Contractor as necessary to restore the integrity of the paint system shall repair any damaged areas of the coating.

Any additional painting required as a result of the Final Inspection shall be done as required to meet this specification at no additional cost to the Government.

J. DOCUMENTATION AND WARRANTY

1. Documentation

For the vessel, the Contractor shall provide a written signed statement from the paint manufacturer certifying that all coating application and surface preparation are in accordance with the coating system manufacturer's requirements, and that the coating application meets all requirements in this specification.

The Contractor shall provide documentation logs for each coating applied. The logs shall include the following parameters:

- a. Coating (per specification) type.
- b. Coating manufacturer's requirements for preparation, environmental conditions and application.
- c. Date and time of preparation and application.
- d. Extent and location of area coated.
- e. Surface: preparation, condition at time of coating, temperature at time of coating, dew point at time of coating.
- f. DFT measurements for each applied coating type. Measurements shall be taken as follows:
 - all flat surfaces, one reading per every 200 square feet, uniformly distributed.
 - undersides of all flanges, one reading per every 50 linear feet of flange, uniformly distributed.
 - all free standing structural members, i.e. stanchions, truss diagonals, etc., one reading per 50 linear feet of length each surface, but a minimum of two readings per surface.

Wet film measurements may be taken and converted to DFT as an alternative to direct DFT. In areas where multiple coating types are required, the above DFT requirements are applied to each coating type.

- g. Services provided by paint manufacturer's representative (i.e. DFT readings, dew point, etc.), if present during application.

Signature of paint manufacturer's representative on site, if present.

2. Warranty

For the vessel, the Contractor shall warranty the coating system for one calendar year, commencing at final acceptance. The Contractor shall repair any coating failures during this time period at his cost.

K. SAFETY AND HEALTH STANDARDS

The U.S. Occupational Safety and Health Administration Regulations (OSHA) for shipyard employees engaged in surface preparation and coatings application shall be in accordance with the OSHA regulations stated in 29 CFR, subpart C.

These regulations require the Contractor to have access to a “competent person” to test compartment atmosphere quality. The “competent person” shall be in accordance with OSHA regulations, stated in 29 CFR, subpart A, 1915.7.

The regulations also require that frequent testing of the atmosphere shall be made in compartments being coated or preserved (or prepared for coating or preservation) by paints and coatings dissolved in highly volatile, toxic and flammable solvents (29 CFR, subpart C, 1915.35(b)), to ensure the atmosphere is not hazardous.

Each compartment inspection and test shall be logged on OSHA Form 74, with instructions on how to maintain a safe atmosphere in these spaces until the completion of the contract.

On 24-hours notice of any Government inspection, and before any representative of the U.S. Government boards the vessel for inspection, each enclosed or confined space to be inspected shall be labeled “Safe for Workers” in accordance with the OSHA regulations stated in 29 CFR, subpart C, 1915.31-36. A National Fire Protection Association (NFPA) certified Marine Chemist shall issue the initial certificate. The Contractor’s Competent Person shall certify that all conditions have been maintained and re-certify in accordance with OSHA 29 CFR 1915. Results of daily inspection and instrument testing shall be recorded on Form OSHA-74.

This means that in all spaces so designated:

- The oxygen content of the atmosphere is at least 19.5 percent and below 22 percent by volume;
- The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);
- Any toxic materials in the atmosphere are within permissible concentrations;

Any residues or materials associated with any work in the space shall not produce uncontrolled release of toxic materials under existing atmospheric conditions while maintained as directed.

The Contractor shall notify the Government when this certificate has been issued for each compartment and tank. The vessel shall not be inspected and accepted by the Government without a NFPA Marine Chemist certificate for each compartment designated "SAFE FOR WORKERS".

C410 HULL OUTFIT

Steel Fenders (rub-rails) shall be provided on the hull sides with circular arc cutouts in way of raised draft marks. The edges of the rub rails shall be significantly chamfered to minimize snagging on other barges. Wedge shaped transition pieces shall be provide at the corners where the steel meets the rubber.

Rubber fenders similar to Morse shall be provided at the corners. End fairing shall be provided as required to prevent damage from sidings.

Transition fenders shall be provided between the corner fenders and the rub rails to prevent siding damage to the corner fenders.

C415 DOORS, WINDOWS, HATCHES AND MANHOLES

A. GENERAL

All enclosures shall be high-quality marine type enclosures suitable for the intended service.

Doors, windows, hatches, and manholes shall be located as shown on the contract drawings.

All door, window, hatch, and manhole openings shall be provided with headers and framing as necessary to transfer the hull and local structural stresses around the openings. The headers shall be shown on the structural drawings. The structural requirements are in contract Section C300.

Eyebrows or watersheds shall be installed over all exterior doors and windows that are not protected by overhanging structure. Eyebrows shall be fabricated from steel angles.

All hinged enclosures shall be provided with a securing device in the open and closed position as per EM 385-1-1.

B. DOORS

1. Exterior Doors

All exterior doors shall be flush with the bulkhead, lever type handle, weather tight, gasketed, fabricated of double stainless steel panels with wire infused glass as required, insulated, radius corners, lever lockset closure, heavy duty construction, and adjustable dogs. The fixed lights in the head and locker room shall be frosted.

The doors shall be completely seal welded at the top to prevent rain entering inside the core and corroding the door from the inside out. A 6-inch sill shall be provided on all main deck level doors not requiring a step up to enter the space.

All exterior doors shall be provided with automatic closures.

2. Watertight Doors

Quick acting watertight doors shall be provided in transverse watertight bulkheads as required and as shown on the drawings. Watertight doors in the hull shall be knife edge gasketed, structural type, quick acting with 6 dogs, and shall have a sill height of 6" above the floor level or grating level. Hinges shall be adjustable.

The watertight doors shall be electrically monitored with electronic status indicator in the companionway entrance on the deck.

3. Interior Doors

The interior doors shall be provided as shown on the drawings. Doors shall be suitably sized and double panel, hollow steel (steel to be a minimum of 16 gauge) intended for marine use. Doors shall have fixed lights.

Lights in the Locker Room and Head doors shall be frosted.

C. WINDOWS

All windows shall have wire infused glass. All windows shall be of the same manufacturer to provide consistent styling, function and ease of repair.

Windows shall have security bar guards to minimize vandalism when vessel is left unattended.

The glass shall be set in neoprene glazing with extruded aluminum frames, which are clipped or bolted into the deckhouse structure in accordance with the manufacturer's recommendations.

Aluminum framed screens with stainless steel mesh shall be provided for all opening windows. Screens shall be fitted into a track incorporated into the window frame.

D. HATCHES

1. Storage

Power-assisted heavy-duty steel hatches or non-powered aluminum hatches shall be provided and installed on the main deck as shown on the Contract drawings for providing access to the stores in the hull.

The hatch(s) shall be raised, watertight, dogged, hinged, split cover type construction suitable for one-person operation with reasonable force. The coaming height for the hatch shall be a minimum of 9 inches above the main deck.

One person with a reasonable amount of force shall accomplish opening the hatch doors.

Hatches shall have watertight knife-edge sealing and hold open devices on each door.

2. Clean Out

A 18-inch diameter flush mounted bolted plate cover, watertight clean out hatch shall be provided and installed at the top of the sea chest well at the main deck in the Weld Shop. The hatch shall have sufficient strength to withstand the well internal blow-down air pressure generated by a major blockage of basket and strainer plate.

3. Manholes

Watertight steel manholes, 24-inch diameter, flush lift-out type with "T" handle, knife-edge seal, escape handle, stainless steel, single bolt type, shall be provided as shown on the drawings. "T" handles shall be stowed in pipe rack mounted on adjacent structure. All manhole hatches shall have emergency escape handle for egress from vessel interior.

Escape hatches to open from the exterior with special tool only.

4. Soft Patch

A watertight flush soft patch shall be provided in the main deck over the diesel generator. The size of the clear opening shall permit removal of the diesel generator in one piece.

Soft patches shall be secured flush to the main deck with countersunk holes and corrosion resistant flat head machine screws with hex head recess and white liquid Teflon anti-seize applied to the threads.

E. LOCKS AND KEYS

All exterior doors, the raised watertight hatch for access to the Storage Room, all exterior control stations and the office interior door shall be fitted with suitable locks.

All door locks shall be lever type and suitable for marine service. The lock system shall be similar to Best Lock Corporation interchangeable core and master key.

The keys shall be delivered in a box stowed in the pump room wall, with numbered hooks for each type, with cross reference designation stenciled on the inside cover of the box.

Locks are keyed alike for each door except for Office, which is only opened by the Master key.

C420 DECK FITTINGS

A. KEVELS

The Contractor shall provide and install steel kevels at the locations shown on the contract drawing. The kevels shall be of the open type with smooth formed openings and manufactured of cast steel. Kevels with plate edges in openings are not acceptable. Kevels shall be continuously fillet welded to deck insert plates that are at least 1/8 inch thicker than the surrounding deck plate.

B. BITTS

The Contractor shall provide and install 10-inch double bitts as shown on the contract drawing.

C TOWING FITTINGS

Eight (8) cast steel open chocks, (4) at each end of the barge, shall be provided as shown on contract drawings. The chocks shall be 4x8-inch opening size.

D FAIRLEADERS

Four (4), 10 inch, open type double sheaves shall be installed as shown on the contract drawings for use with the mooring winches.

C425 WALKWAYS, RAILINGS, AND FLOOR PLATES

A. RAILINGS

A three-course, fixed, pipe handrail shall be provided around perimeter of the Deckhouse top and foredeck area as shown on the General Arrangements.

Railing stanchions and the top course shall be 1 1/2" Schedule 80 pipe with lower course being 1" Schedule 80 pipe.

The height of the railings shall be 42 inches on the fore deck. The height of the railings shall be 39" to the top of the top rail on the deck house top in accordance with EM 385-1-1.

Access openings shall be provided in the railing at the vertical ladder and at the mooring fittings.

Grab rails shall be provided on the aft end of the deck house in way of each ballast tank manhole.

B. FLOOR PLATES

Diamond plate floor plates shall be provided in the Machinery Rooms and Storage Rooms. Flooring shall be installed on top of the flange of the transverse bottom frames. The flooring shall be covered and protected during the construction of the vessel.

Floor plates shall be 1/4-inch aluminum diamond tread. These plates shall be installed in sections for easy one-person removal and shall be secured with countersunk flat head stainless steel screws, minimum 1/4 inch diameter. Sections shall be sized so that a single person shall lift out each panel. The supports shall not extend above the surface of the abutting plates. The plates shall be required to be flat and free from warp, twist, and other defects affecting their appearance and serviceability.

The floor plates shall be designed to support minimum static loads of 100 lbs. per square foot without excessive deflections, and shall be locally reinforced, as necessary, where greater loadings are contemplated in the removal or disassembly of machinery for overhaul.

The aluminum diamond tread plate panels shall be designed to support for a uniform load of not less than 120 lbs/sq ft.

C427 VERTICAL AND INCLINED LADDERS

A. GENERAL

The Contractor shall provide and install steel vertical and inclined ladders for the vessel in the locations shown on the above contract drawings.

Units shall be attached to the vessel by stainless steel bolt fasteners for easy removal.

B. INCLINED LADDERS

Risers shall be equally spaced between decks in accordance with the following table.

Non-skid tread and safety nosing shall be installed on all inclined ladders.

The preferred ladder angle, where applicable, shall be 50-degrees, which is associated with a 9.25-inch riser, a 64-inch head clearance normal to the slope and a ~33-inch handrail height.

Ladder Angle (Degrees)	Head Clearance (Inches)	Riser (Inches)	Effective Tread (Inches)	Handrail Height (Inches)
40	72	8.00	9.5	34
42	71	8.25	9.2	33.75
44	69	8.50	8.8	33.5
46	68	8.75	8.5	33.25
48	66	9.00	8.1	33
50	64	9.25	7.8	32.75
52	62	9.50	7.4	32.5
54	59	9.75	7.1	32.25
56	57	10.00	6.7	32

C. VERTICAL LADDERS

Vertical ladders shall be provided under all manhole openings in the main deck in accordance with the General Arrangements.

Ladders shall have 18-inch clear rung width and shall provide a minimum of 7 inches toe clearance from all obstructions. Ladder rung spacing is to be uniform throughout the length of the ladder and shall not to exceed 12 inches.

Ladders shall be removable with bolt fasteners.

The ladders shall be fabricated of 3"x3/8" bar with 3/4" square rungs.

Square bar rungs shall be turned edge-up.

C430 DECK COVERING AND CEILING

A. DECK COVERING

1. Weather Decks

All weather decks shall be prepared for a non-skid surface. See coating schedule in Clause C406.

A portable excavator work crawler path shall be provided as shown on the contract drawings. The work pad shall be made up of easily assembled and disassembled ~6-inch deep oak timbers. Timber shall be secured at ends by recessed flat bars, one fixed and one removable.

2. Interior Decks

All steel decks shall be prepared as recommended by the manufacturer prior to floor covering installation.

The Day Room and Office shall be covered and seam-sealed with a system of rubber tiles similar to TUFLEX Spartus.

A vinyl sanitary cove base, of a similar color to the adjacent floor coving, not less than 4 inches high, shall be worked around all bulkheads and equipment. The coving shall be sealed at the top and bottom edge with a long lasting silicone seal. Where coving shall not fit below doorways, the coving shall be trimmed to suit or sealed by other means on a instance by instance basis as determined on site by the MDC representative.

The COR shall select colors for the floor covering from the available color options.

Floor covering and accessories, including any necessary sealers and finish coating, shall be installed in accordance with the manufacturer's recommendations and instructions.

Protective covering shall be installed over the floor covering just after installation and shall be maintained until construction is complete.

B. CEILING

1. Day Room and Office

A suspended ceiling shall be provided with approximately 7'-6" clearance above the finished floor. Ceiling panels shall be of 5/8" thick, moisture proof, fire retardant and non-asbestos material. The panels shall be supported by a standard, approved, framing system painted to match the panels.

C435 JOINER WORK

Joiner sheathing panels shall be provided for the Day Room, Office, Head and Locker Room. Sheathing shall be single panel construction, 5/8-inch thick, with a 0.06" non-asbestos laminate applied to both faces making an overall thickness of 3/4-inch.

Single panel joiner bulkheads, 5/8" thick with a 0.06" non-asbestos laminate applied to both faces making an overall thickness 3/4" shall be provided for the forward and starboard bulkheads of the office space.

Sheathing and bulkheads shall be supported by a standard, approved, marine joiner framing/trim system painted to match the joiner panel.

All items mounted against the bulkhead panels shall be fastened through the panels directly to vessel structure.

There shall be no wood behind joinery. If used, furring strips shall be metal.

Doors, windows, lighting fixtures, and ventilation penetrations shall be integrated into the joinery system using moldings and trim pieces provided by the joinery manufacturer for that purpose.

All cabinetry shall be provided and installed complete with appropriate drawer slides, hinges and handles.

The color scheme of joiner work shall be selected by the COR.

C436 INSULATION AND SHEATHING

A. INSULATION

Insulation shall be provided on bulkheads and overheads for all companionways and deckhouses on the main deck. Below deck, insulation shall be provided on bulkheads, side shell and overhead on the weather bordering the Machinery Rooms and the Storage Rooms to within 12 inches above the floor plates.

Insulation, sheathing, and the mounting system used for both shall be suitable for marine workboat service, anticipating high levels of dampness and vibration, and temperature extremes. Insulation shall be of the fiberglass hull board type (similar to Claremont's, N3A Hull board) and in accordance with USCG regulations. Installation shall be in accordance with the manufacturers' recommendations for the intended service. However, as a minimum, the mounting studs shall be welded to bulkhead/roof structure. Adhesive mounting is not acceptable.

Insulation in all spaces with machinery and the storage room shall be specially coated with a damage resistant material similar to Claremont's "Tuff-Skin 1613". Insulation in these spaces shall be faced with Mylar or its equivalent to prevent oil absorption.

All insulation shall be kerfed to wrap around stiffeners larger than 4 inches in depth, with additional filler under flanges. The system shall be applied to stack soft patches such that the soft patches shall be removed with the system integral with the patch.

The insulation system shall be sufficient to meet the acoustic criteria in Clause C180, and the thermal criteria in Clause C685. In all cases, insulation thickness shall not be less than 4 inches.

All exposed edges shall be capped with sheet metal channels.

B. SHEATHING

Sheathing shall be provided in all areas with insulation.

Sheathing in the Welding Shop shall be solid sheet metal suitable for the intended application with a curtain plate at deck level for the intended application.

Sheathing shall be 14 gage perforated, unpainted aluminum sheets with a minimum of 30% open area, except in way of the shop, which shall be solid steel galvanized sheets of suitable thickness.

Since the insulation treatment wraps around stiffeners, furring strips shall be required to provide a firm fair base for the sheathing. The furring strips shall be mounted to stiffeners with stand offs to avoid crushing the insulation and acoustical treatments.

Sufficient furring shall be provided to provide a fair surface for the sheathing. All furring shall be metal. No wood is permitted behind sheathing.

Framing, furring strip, and fastener spacing shall prevent drumming and vibration of sheathing. The sheathing shall be fastened to the furring strips or the deckhouse framing by pop rivets, or self-tapping stainless steel sheet metal screws with decorative caps.

Access panels shall be provided as required for access to wiring or piping behind the sheathing.

All items mounted against the bulkhead panels shall be fastened through the panels directly to bulkhead support structure.

The color scheme of joiner work shall be selected by the COR.

C437 FURNITURE AND FURNISHINGS

Furniture, furnishings, and equipment for the various spaces in the barge shall be arranged in accordance with drawing #665-A215-01. A description of the furniture, furnishings, and equipment to be provided and installed is presented on drawing #665-A437-01.

Colors of the furniture and furnishings shall be selected by the COR from the available colors.

C445 LIFESAVING AND SAFETY

A. DESCRIPTION OF WORK

The Contractor shall provide and install the necessary lifesaving and safety equipment listed below. The final equipment locations shall be made by the COR during the Construction Phase.

B. LIFESAVING EQUIPMENT

Three (3) 30 inch diameter life rings, USCG approved, similar to a JIM-BUOY model number CGO-30 fitted with rope, shall be provided and installed on life ring racks. At least two life ring shall be provided with a self-igniting watertight and one with 15 fathom line and smoke signal.

C. SAFETY EQUIPMENT

One 24-unit first aid kit I waterproof container to be mounted in the day room area.

C456 WINCHES

A. SPUD WINCHES

1. General

Four (4) compact design, deck-mounted, individual, single drum, variable speed hydraulic spud winches, similar to PULLMASTER type, shall be provided to raise and lower the spuds. Winches shall be located as shown on the Contract drawing. Power up, power down, anti-back lashing free fall feature and full-release free-fall with manually actuated free-spool operation shall be provided. Free-spool feature shall be for unattended spud-moored, weekend float operation with water level changes. Exterior fittings shall be stainless steel.

When free-falling the spud in close proximity to the river bottom, the turning inertia of the winch drum shall be arrested at the moment the spud strikes bottom to prevent a back lash in the wire.

To raise the imbedded spud from the river bottom, the winches shall develop full horsepower and highest line pulls on bare drum at slowest line speed. Once the spud is free of river bottom, the hoist speed shall be capable of increasing to 50-ft/min with reduced line pull to full horsepower limit.

The working line pull of the winch while hoisting the spud shall be at least equal to the dry weight of the spud when the wire is on the second layer of the drum.

2. Hydraulic Power Units (HPU)

Two (2) identical, individual, remote, barge hold-mounted electro-hydraulic power units (HPU) shall be provided and installed as shown on the contract drawings. Each transverse pair of spud winches shall be independently powered by one (HPU) with redundant crossover piping and manually actuated valves to the other pair of winches.

The hydraulic system shall be designed and equipped to operate on biodegradable synthetic fluid.

The HPU reservoirs shall be complete with oil level and temperature gauges, bolted plate clean out, vented fill cap, drain, drip pan, and electric immersion heater sized for the ambient temperature conditions. The gauges on the reservoir shall conform to the requirements of ABS Rules. To prevent the possibility of accidentally emptying the entire contents of the reservoir in the event of a leak, a level switch shall be provided to shut down the hydraulic pumps when the oil level falls below a pre-designated limit.

The design, fabrication and installation of all hydraulic system components shall ensure an aligned, tight and dirt free installation. All piping, components and fittings shall be designed to withstand hydraulic shock.

Components and fittings shall be arranged and located to ensure convenient maintenance and repair. All maintenance components, e.g., filters, shall be readily accessible and removable without disconnecting the attached piping or dismounting the filter housing.

The breather opening into the reservoir shall have 10-micron filtration, as well as replaceable, cartridge-type desiccant air dryer to minimize condensation within the reservoir.

3. Controls

Each spud winch shall be remotely controlled from a central control station located within sight of all spud wells. Local (to the winch) controls shall also be provided. Winch controls shall be electro-hydraulic controls.

Independent controls of each spud winch shall be provided with ability to hoist two spuds simultaneously at full power and half speed or to hoist one spud at full power and maximum speed.

Audible and visual hydraulic fluid low level alarms shall be provided on the central control console.

Weather tight covers shall protect all controls in the weather. Covers shall be steel, hinged and lockable.

B. DECK WINCHES

The Contractor shall provide and install four (4) compact, individual single drum self-contained hydraulic-electric deck mounted mooring winches located as shown on the Contract drawing.

The winches shall be provided with a 40-ton holding brake. The winch drums shall be outfitted with ~176-feet of ¾-inch wire rope with soft eye end attachment. Wire rope shall be 6x19 class EIPS for added strength.

Wire rope shall be provided with certification documents in accordance with the requirements of Section C580.

C460 DRAFT MARKS, HULL MARKINGS & NAMEBOARDS

A. COLOR SCHEDULE

The color schedule for the draft marks, hull markings, name boards shall be in accordance with contract Clause C406.

B. VESSEL DRAFT MARKS

Draft marks of raised Arabic type numerals, 6-inches in vertical height and cut from 1/4 inch steel plate, shall be continuously welded to the shell plating. The draft numbers shall be located equidistant from midships as shown on the Contract drawings. The draft marks shall be measured from the underside of the bottom plating projected to the bottom of the numerals. The bottom of the figures shall correspond to multiples of 1 foot of draft.

C. HULL MARKINGS

The title U.S. ARMY CORPS OF ENGINEERS, in Gothic letters 12 inches high, as show on the contract drawings, shall be cut from 1/4 inch plate continuously welded to the hull side from frames 14-17, P/S.

The Contracting Officer's Representative shall approve the exact locations of the hull markings prior to installation.

D. NAME BOARDS

The name of the barge shall be displayed on name boards at the aft end of the excavator deck at the outboard rails.

Exact locations and size shall be accepted by the COR prior to installation.

Name boards shall be made of steel, rectangular in shape, 14 gauge, with 12 inch high Gothic letters printed in gold porcelain finish with a blue porcelain finish background. The name boards shall be provided with a 2-inch minimum border all around.

E. COMMUNICATIONS MARK AND SIGNATURE

The Contractor shall provide and install the new CORPS OF ENGINEERS "Communications Mark and Signature", one on the outboard side of both the deckhouse and welding shop.

Appropriate excerpts from the U.S. Army Corps of Engineers' "Graphic Standards Manual" shall be furnished to the successful bidder.

The Communications Mark and Signature shall be the largest size possible in keeping with the proportions of the mounting locations.

The Castle and Border of the Communications mark shall be made of 316 Stainless Steel plate, 3/8 inch thick and attached to the base plate with 2 inch long stainless steel standoffs.

The Base Plate is the mounting device for the communications mark and the signature and shall be 3/8-inch thick stainless steel plate. Edges of the plate shall be ground smooth. The Base Plate background for the Communications Mark is covered with red paint or adhesive, color "Pantone 032".

The signature shall include the district designation and shall be in the largest letters possible in keeping with the proportions of the Communications Mark. The letters shall be made of 3/8 inch thick stainless steel plate and attached to the base plate with 2 inch long standoffs.

C461 NOTICES AND MARKINGS

All notices shall be stamped or engraved on brass or plastic plates. All weather exposed nameplates, notices, and markings shall be of brass.

As a minimum, the following signs shall be provided:

“NO SMOKING” notices shall be placed at each fuel oil, gear oil, hydraulic oil, and lube oil fill station.

All controls, gauges, switches, etc., shall be labeled with phenolic label plates to permit operation of the vessel.

An engraved metal fire control plan. See contract clause C679 D.

Manholes, vents, tanks, fills and sounds shall be marked with tank identification and intended service with brass tags.

Confined spaces (tanks, hull voids and hold compartments) shall have a sign at each entry stating “Confined Space DANGER Permit Required”.

All watertight doors shall be labeled on both sides at 5’-3” above flooring with the following message:
the normal door position is closed to prevent sinking of vessel when holed.

C500 SPECIAL FEATURES

C550 SPUDS

Three (3) heavy wall, cylindrical steel pipe spuds shall be provided as shown on the Contract reference drawing. Spuds shall be 42-feet length overall.

Reinforced spud corners shall be provided by continuously fillet welding heavy flange equal length angles to the steel pipe spud.

Steel pipe shall be at least XH type construction classification.

The point of the spud shall be reinforced with square bar stock welded to diaphragm plates.

Stops and lifting attachment shall be provide at the top of each spud.

The spuds shall be designed to withstand vessel storm survival wind and current conditions, which is 2-MPH current and 60-MPH wind speed.

Spud weight shall be minimized to reduce the size and cost of the hoisting system and required crawler machine capacity. Spud weight plus lifting collar and rigging shall be less than 22-kp.

C551 SPUD HEIGHT MARKING & CERTIFICATION

A. HEIGHT MARKING

The spuds shall be marked to aid in determining their maximum draft and air draft (height above the waterline). The horizontal reference plane for the marks shall be the top of the well cap. The marks shall be visible from the local operating station.

The Contractor shall select a method of marking that is permanent and highly visible. When the bottom of the spud depth zero mark lines up with the reference plane, then the lower tip of the spud shall be flush with the bottom of the vessel. The air draft of a spud shall equal the spud length overall minus the wet length overall of the spud. The wet length shall equal the vessel draft (marks located on the side shell of the vessel at spud locations – see contract Clause C460) plus the spud depth mark reading.

The Contractor shall mark the spud depth below the vessel bottom on the spud in five foot increments in accordance with the above. One foot interval marks shall be designated between the five foot marks. A 3 inch wide white stripe shall be painted all around the spud, with the bottom edge of the stripe indicating the uppermost position of the spud.

The Contractor shall supply and install in the vicinity of each spud, an information plate listing the certified spud length and how the vessel maximum draft and spud air draft are determined. The information plates shall be permanent, legible and include a diagram. See attached Sketch #551A – Spud Depth Marking as an example.

B. CERTIFICATION OF SPUD LENGTHS

The as-built dimensions of the spud(s) shall be verified by the COR prior to installation of any spuds on the vessel.

C552 SPUDWELLS

Four (4) spud wells shall be provided as shown on the Contract drawing.

Spudwells shall have following features:

- Side entry open gate type.
- Compact design to minimize deck space obstruction.
- Gate pin removal, gate opening and spud side removal without dry-docking the vessel.
- Wear pad replacement without dry-docking.
- Cofferdam construction to confine flooding
- Energy absorbing lifting collar fenders

Spud fenders shall be removable from the top of the well without dry-docking the vessel.

The top of the spudwell shall be capped with energy absorbing fenders attached to the bottom of a spud-lifting collar with sling shackle attachment points provided. The top of the cap shall be the reference plane for the spud markings.

Pinned gates shall be provided for side removal of the spud.

Wear pad contact on spud shall be near spud corners leaving space in the middle to clear raised spud markings and wire rope.

If the spud is accidentally released in free-fall mode in deeper water than anticipated, the underside of the spud stop plate shall strike the top of the lifting collar. The energy of the resulting impact shall be partially absorbed by the marine rubber fenders mounted on the underside of the lifting collar base plate, which rests on top of the spud well coaming.

C554 SPUD HOIST SYSTEM

The spud hoist system shall be designed for 2-part wire rope bottom sheave hoisting and shall raise and lower the spuds by individual single drum winches with free-fall clutches.

The working pull of the wire rope at design speed shall be equal to the weight of the spud resulting in an application factor of 2.

Deck obstructions shall be minimized by the installation.

The spud winches shall have a free-spool payout feature to compensate for rise of river level.

A fleeting sheave shall be provided for each winch mounted on the spud well, as shown on the Contract reference drawings. The sheave pin shaft shall be suitably sized by structural analysis to withstand loads generated by the breaking strength of wire rope leads or winch pull limitation. Suitable wire rope keepers shall be provided on the sheave.

The spud hoist cable shall be stainless steel and provided with appropriate certification documents in accordance with the regulatory body requirements.

C580 WIRE ROPE CERTIFICATION

The Contractor shall provide the COR with a "Certificate of Examination and Test of Wire Rope Before Being Taken Into Use" for each wire rope installed on the dredge's winches. The certification shall be performed to the requirements of 29 CFR, part 1919 and be in accordance with the requirements of 29 CFR 1918.11(a).

C599 EXCAVATOR

After delivery of this vessel, the Government will utilize a CAT 375 MH on this vessel. The excavator procurement is not part of this contract. Excavator information is only being provided for the purposes of developing the barge design.

C600 MACHINERY

C601 MACHINERY SYSTEMS

A. GENERAL

All machinery systems shall be in accordance with the regulatory bodies referenced in Clauses C003 and C004, and shall also comply with additional regulatory bodies where specified. References made to specific sections of codes, rules and standards in these specifications are intended to emphasize specific salient items.

All equipment shall be rated for marine duty service.

All pumps are to be provided with mechanical seals.

Machinery guards shall be provided over all rotating and hazardous machinery. The guarding shall be consistent with that required by the U.S. Army Corps of Engineers, "Safety and Health Requirements Manual".

Manufacturers' recommendations, concerning fabrication and installation, shall be followed in addition to these specifications.

B. PRESSURE & TEMPERATURE GAUGES

All pressure gauges shall give readings in psig and all temperature gauges shall give readings in degrees Fahrenheit. The gauges shall be selected so the operating point is in the middle of the gauge range. All gauges shall be fitted with gauge isolation valves.

Pressure gauges shall be provided on the discharge of all pumps, and pressure/vacuum gauges shall be provided on the suction of all positive displacement pumps and the bilge pumps.

Temperature gauges shall be provided on all piping which transfers a medium in excess of ambient temperature.

C. PIPING - GENERAL REQUIREMENTS

Piping shall be sized and arranged to obtain optimum operating conditions for the equipment and intended service. Items of piping not covered in these specifications, but necessary for proper installation and operation shall be furnished and installed the same as if specified.

System design shall route all piping as directly as practicable; shall not interfere with structure, machinery access or handling gear; and shall be sufficiently flexible and supported to account for thermal expansion, shock, vibration and working of the vessel. Wherever practicable, piping shall be run below grating level. No piping runs shall be made through access openings.

A sufficient number of unions and/or flanges shall be installed in all pipe lines to permit dismantling of the lines and equipment. Valves shall be installed in sufficient quantity to isolate any piece of equipment in the systems.

Sufficient drains shall be provided to permit draining of all lines within the vessel in an even trim condition. The drains shall be provided at low spots in the piping, located so that they shall be readily accessible. Screwed plugs shall be brass in all piping systems.

Pipes passing through watertight or oil tight bulkheads shall be made of extra heavy pipe in that section, in way of the penetration and the bulkhead or deck shall maintain its integrity. Where pipes pass through watertight bulkheads or decks, the penetrations shall be made watertight.

Heat sensitive materials shall not be used in piping systems that penetrate watertight subdivisions when deterioration of such systems would, in event of fire, impair the watertight integrity of such bulkheads. Copper tubing that penetrates watertight bulkheads and decks shall use a suitable stuffing tube. Spool pieces with flanges shall be provided for all galvanized pipe penetrations to prevent the destruction of galvanizing due to welding.

All piping exposed in unheated spaces or to the weather and carrying freezable fluids shall be electrically heat traced, except that the fire main piping may be designed such as to be a dry system when not pressurized. Freeze protection shall be provided by installing drain plugs at all low points in all piping systems carrying freezable fluids.

D. PIPING - SPECIFIC REQUIREMENTS

All piping shall be schedule 40, ASTM 106 or ASTM A-53 (Type S or E), except where otherwise indicated.

All piping between the side shell and the first inboard valve shall be a minimum of schedule 80. Fastenings for valves at the hull connections and sea chests shall be stainless steel. All tank penetrations shall be through schedule 80 welded couplings unless specified elsewhere.

Three or more valves located together for the same service shall be combined in a manifold.

Manually operated valves shall be readily operable by one person, directly or through mechanical advantage type operators.

Piping shall be sized in accordance with the velocity criteria specified in Table C601-1.

TABLE C601-1
MAXIMUM ALLOWABLE VELOCITIES (FPS)

SYSTEM	MAX. ALLOWABLE VELOCITY	VELOCITY LIMIT
Fresh Water Suction	$3 \times \text{SQRT (D)}$	15
Fresh Water Discharge	$5 \times \text{SQRT (D)}$	20
Diesel Oil Suction	$2 \times \text{SQRT (D)}$	7
Diesel Oil Discharge	$5 \times \text{SQRT (D)}$	12
Dirty Oil Suction	$1 \times \text{SQRT (D)}$	4
Dirty Oil Discharge	$2 \times \text{SQRT (D)}$	6

NOTES:

(D) = Inside Diameter of pipe in inches

E. PIPING RESTRICTIONS

Piping shall not be run over or in the vicinity of switchboards, distribution panels, or other electrical equipment unless unavoidable, in which case flanged joints, valves, etc. shall not be installed in the vicinity.

Piping conveying flammable materials shall not be routed adjacent to or over hot surfaces unless unavoidable, in which case adequate shields shall be provided.

F. PIPE HANGERS

Rigid hangers shall be designed and located in accordance with ASTM Designation F708-81 (Re-approved 1991). The hangers shall safely support the weight of the piping, its operating or test fluid (whichever is heavier), and its insulation and lagging (where installed).

The number of supports installed, the type selected and their location shall prevent excessive vibration of piping under all system operating conditions, but they shall not constrain the piping to such an extent as to cause excessive transfer of load from support to piping or from support to support.

The locations and type of supports selected shall be to prevent excessive stress from being transmitted by the piping to machinery, equipment, or ship structure.

Hangers for copper pipe or tubing shall be lined with plastic. Non-ferrous metal pipes shall be insulated from direct contact with any steel structure.

G. PIPE CLEANING

All piping, piping appurtenances and applicable equipment shall be thoroughly cleaned after fabrication and prior to installation in the vessel. After complete installation, each system shall be thoroughly cleaned and flushed of all foreign matter with the applicable system's medium, or an approved substitute.

System flushing shall be conducted at the applicable system's maximum operating pressure and temperature, and above normal line velocity. However, prior to flushing operations, such units as heat exchangers and control valves, having in-line mechanisms capable of trapping or being affected by the carry-over of foreign matter, shall either be removed or blanked-off and bypassed.

H. PIPE MARKING

All piping shall be marked and color-coded in accordance with the following:

Fuel Oil	Yellow
Lube Oil	StripedBlack/Yellow
Waste Oil	Brown
Engine Cooling	Light & Dark Blue
Bilge\Ballast.....	Light Green
Potable Water.....	Light Blue
Gray Water.....	Striped Wht/Dk Grn
Black Water	Dark Green
CO ₂ System.....	Striped White/Red
Compressed Air	Tan
Hydraulic Oil	Orange

The size of the legend letters and the length of the color field shall be as follows:

OUTSIDE DIAMETER OF PIPE OR COVERING IN INCHES	MINIMUM LENGTH OF COLOR FIELD IN INCHES	SIZE OF LEGEND LETTERS IN INCHES
3/4 to 1-1/4	8	1/2
1-1/2 to 2	8	3/4
2-1/2 to 6	12	1-1/4
8 to 10	24	2-1/2
over 10	32	3-1/2

Legends shall be applied close to valves and adjacent to changes in direction, branches, where pipes pass through bulkheads or decks and as frequently as needed along straight runs to provide clear and positive identification.

C630 FUEL OIL SYSTEM

A. GENERAL REQUIREMENTS

The Contractor shall provide and install all pumps, filters, piping, hoses, and valves necessary to form a complete fuel oil system. The system shall fuel the main and auxiliary diesel generator sets and the boiler, and shall be used to fill the built-in tank on the excavator.

All fuel oil piping shall be seamless black steel, A106.

B. FUEL OIL TANKS

See Clauses C130 and C320 for fuel oil tank capacities and details of the construction of the fuel oil tanks. The tanks shall be complete with necessary fill, supply, drain, vent and gauge connections and inspection openings and shall be electrically bonded to the common ground.

C. VENTS, SOUNDS & FILLS

All vents, sounds, and fills shall be installed outside of the deckhouse.

The main fuel tank fill station shall be located outside the deckhouse on the forward bulkhead. The fuel fill inlet shall be 18 inches above the deck and be fitted with a bronze screw cap labeled "FUEL." The fill, along with the fuel tank vent, shall terminate inside a steel spill containment enclosure having a padlocked, watertight cover and a 1½-inch drain line to the oily bilge tank. The cover shall have a rain lip and air passage for ventilating the enclosure when the cover is closed.

The main fuel oil tank shall be fitted with a 1½-inch sounding tube and a 4-inch vent that terminates in a gooseneck and a corrosion-resistant flame screen. The sounding tube shall be run as straight as practical, located at the lowest part of the tank and perforated with a ¼-inch diameter hole every 6 inches along its length to facilitate insertion of the sounding rod. The sounding tube shall be flush mounted type in the deck and furnished with tee wrench. At the main fuel tank bottom there shall be installed a 6 inch x 6 inch striking plate of at least 3/16 inch thickness, seal welded to the tank bottom.

A sounding tape and plumb bob shall be supplied to sound the tanks.

The 250-gallon day tank, located in the auxiliary generator room, shall be vented to the deckhouse roof through a 2½-inch vent. The vent shall terminate in a gooseneck and be fitted with a corrosion-resistant flame screen. A 1½-inch tank overflow line shall be provided from the vent back to the main fuel tank. The fuel tank vent, shall terminate inside a steel spill containment enclosure having a padlocked, watertight cover and a 1½-inch drain line to the oily bilge tank. The cover shall have a rain lip and air passage for ventilating the enclosure when the cover is closed.

D. STRIPPING CONNECTIONS

A 1-inch (nominal) pipe drain, with a gate type shut-off valve shall be fitted approximately ½ inch from bottom of the main fuel oil tank and the day tank.

E. SUPPLY & RETURN LINES

The Contractor shall install a supply line for the boiler and supply and return lines for the main and auxiliary diesel generator set engines. The size of the lines shall be determined by the engine manufacturer's requirements.

Fuel shall be supplied and returned to the main generator from the main fuel tank; it shall be supplied and returned to the auxiliary generator from the day tank; and it shall be supplied to the boiler from the day tank. The fuel returns from the engines shall enter the tanks at the end opposite the fuel supply connections and as high as possible. All fuel supply and return lines shall be connected to the engines by ABS and USCG approved flexible connections that meet the engine manufacturer's specifications.

F. EMERGENCY SHUT-OFF VALVES & ISOLATION VALVES

Each tank connection subject to a static head of fuel shall have a shut-off valve at the tank with a remote operated reach-rod operable from the outside the house on the main deck level. The reach-rods shall run as directly as possible to the shut off valves to avoid problems with the U-joints.

G. FUEL OIL TRANSFER SYSTEM

The fuel oil transfer pump shall be used to transfer fuel oil from the main fuel oil tank to the day tank and the excavator fuel tank. The transfer system shall consist of a knife-edge strainer, fuel transfer pump and piping. The positive displacement fuel oil transfer pump and motor, similar to an Oberdorfer, shall be sized to fill the day tank in 15 minutes.

The built-in tank on the excavator shall be filled by using the electric-rewind hose reel provided by the Contractor on the forward end of the deckhouse. The hose reel shall be similar to HANNAY Model 7526-30-31EP, equipped with a HP-110V-1 phase motor, gear, and auxiliary crank and furnished with 75 feet of 1-inch hose and an auto shut off service nozzle. Type of roller and swivel provided with the hose reel shall be suitable for the actual installation. The fueller also shall be furnished with a bonding strap and clamp on a retractable device.

Both the hose reel and the vent and deck fill station shall be enclosed by containment enclosures as shown on the contract drawing. The fill station enclosures shall have a hinged cover that permits adequate ventilation when closed, and a 1½-inch drain line to the oily bilge tank.

The fuel oil transfer pump shall have local (to the pump) and remote controls for start-stop. The remote start-stop controls shall be located at the hose reel.

A manually operated, CUNO “Auto Klean” knife-edge strainer shall be provided on the inlet side of the fuel oil transfer pump. The CUNO filter to be supplied shall be similar to type EG.

The CUNO “Auto Klean” knife-edge strainer shall be provided with a pipe drain with a shut-off type valve and pipe cap in place of the drain plug. There shall be sufficient space for a small metal container to be placed under the drain.

All transfer lines shall be installed approximately 6 inches from the bottom of the fuel oil tanks.

H. TANK GAUGING & FILL ALARMS

The main fuel oil tank and the day tank shall be fitted with a liquid level gauge similar to a KENCO model 9900 series level gauge with integral valves. The liquid level gauges shall have all stainless steel construction; each gauge shall be calibrated to show $\frac{1}{4}$ tank level, the $\frac{1}{2}$ tank level, and the $\frac{3}{4}$ tank level.

Low-level alarms shall be installed on both the main and fuel oil day tanks. A warning shall sound at a tank capacity of 25% and low alarm at a capacity of 10%. The alarms shall be audible and visual and shall be recorded at alarm panels located in the workshop.

An alarm panel shall be installed at the fuel fill station to report a high tank level in the main fuel oil tank. Audible and visual alarms shall be received at these panels with a warning sounding at a tank capacity of 90% and a high alarm at a capacity of 95%.

I. PRIMARY FUEL FILTERS

The Contractor shall be responsible for sizing and providing RACOR filters based on the main and auxiliary diesel generators selected. The RACOR filters supplied shall meet the engine manufacturer's specifications.

The RACOR filters shall be mounted so that a 5-gallon bucket can be placed under the filter. The bucket shall rest on a tray or pan 24 inches by 24 inches with 6-inch deep sides.

C635 LUBE OIL SYSTEM

A. GENERAL REQUIREMENTS

The Contractor shall provide and install all components, piping, and valves necessary to form a complete lube oil system. The lube oil system shall supply clean lube oil to the generator diesel engines. The Contractor shall ensure that the diesel generator engines and the engine on the excavator use the same grade of lube oil.

All lube oil piping shall be seamless black steel, A106.

The lube oil tank(s) shall be sized and constructed of welded steel in accordance with Clauses C130 and C320.

The generator engine sumps shall be fitted with quick disconnects in accordance with Clause C605 and Clause C733 of the contract.

B. TANKS, FILL & VENT CONNECTIONS

A 275-gallon, non-integral tank shall be sized and constructed to hold lube oil. See Clause C320 for details of the tank's construction.

The tank shall be equipped with a 1½-inch fill and a 1½-inch sounding tube accessible from the main deck. The fill inlet shall be 18 inches above the deck and be fitted with a bronze chain and bronze screw cap labeled "LUBE OIL." The sounding tube shall be run as straight as practical, located at the lowest part of the tank and perforated with a ¼-inch diameter hole every 6 inches along its length to facilitate insertion of the sounding rod. The sounding tube shall be flush mounted type in the deck and furnished with tee wrench. At the main fuel tank bottom there shall be installed a 6 inch x 6 inch striking plate of at least 3/16 inch thickness, seal welded to the tank bottom.

The tank shall also have a 2-inch vent terminating in a gooseneck fitted with a corrosion-resistant flame screen.

The fill and vent openings shall be in a permanent spill containment enclosure located on the main deck. The enclosure shall be identical in construction to that provided for the fuel oil fill/vent, described above in Clause C630, including the 1½-inch drain line to the oily bilge tank.

The tank shall be fitted with a mechanical gage for reading the tank's liquid capacity. The Contractor shall provide a pneumatic barrel pump for filling the tank.

C. DRAIN CONNECTION

A 1-inch (nominal) pipe drain, with a shut-off valve and pipe cap, shall be fitted at the lowest point of the lube oil tank. The drain shall be arranged so that an oilcan or 5-gallon bucket can be placed beneath it.

D. LUBE OIL TRANSFER SYSTEM

The Contractor shall supply and install a gear pump, similar to an Aeroquip FLOCS 15 for transferring lube oil from the lube oil tank to generator engines. The pump shall be located so that it can service the main engines and the generator set engines. A y-strainer shall be provided on the suction side of the pump.

The lube oil transfer system shall be hard piped to the vicinity of the engine lube oil fill connections and terminate at ball valves with quick disconnect couplings. The Contractor shall supply lengths of hose to connect the lube oil system from the valves to the engine fill connections.

C636 WASTE OIL SYSTEM

A. GENERAL REQUIREMENTS

The Contractor shall provide and install all components, piping, pumps, and valves necessary to form a waste oil system. The waste oil system shall be provided to collect crankcase drains from the generator set engines.

B. TANK FILL, VENT & STRIPPING CONNECTIONS

The 250-gallon waste oil tank shall be designed and constructed of welded steel in accordance with Clauses C130 and C320. The tank shall be equipped with a 1½-inch pump out line and a 1½-inch sounding tube accessible from the main deck. The opening of the pump out line shall be 18 inches above the deck and be fitted with a bronze chain and bronze screw cap labeled "WASTE OIL." The sounding tube shall be run as straight as practical, located at the lowest part of the tank and perforated with a ¼-inch diameter hole every 6 inches along its length to facilitate insertion of the sounding rod. The sounding tube shall be flush mounted type in the deck and furnished with tee wrench. At the main fuel tank bottom there shall be installed a 6 inch x 6 inch striking plate of at least 3/16 inch thickness, seal welded to the tank bottom.

The tank shall also have a 2-inch vent terminating in a gooseneck fitted with a corrosion-resistant flame screen.

The pump out and vent openings shall be in a permanent spill containment enclosure located on the main deck. The enclosure shall be identical in construction to that provided for the fuel oil fill/vent, described above in Clause C630, including the 1½ -inch drain line to the oily bilge tank.

The tank shall be fitted with a mechanical gage for reading the tank's liquid capacity.

C. SYSTEM CONFIGURATION

The dirty lube oil from the diesel engines shall be removed with the fast oil change system (FLOCS 15), provided as part of the Lube Oil System. The hose fitting on the waste oil tank shall match the quick-connect fitting on the fast-oil-change unit.

The waste oil transfer system shall be hard piped to the vicinity of the engine sumps and terminate at ball valves with quick disconnect couplings. The Contractor shall supply lengths of hose to connect the waste oil system from the valves to the engine sump connections.

C637 OILY BILGE SYSTEM

A. GENERAL REQUIREMENTS

The Contractor shall provide separate containment coamings around both engines and an oily bilge system consisting of a 500-gallon oily water tank, piping and an oily water separator. The system shall be provided to collect oily water from the diesel engine drip pans, the engine room bilges and the spill containment enclosures. The oily water separator shall be used to separate the oily water collected in the tank, pump the clean water overboard and transfer the oil to a 55-gallon drum.

The oily water in the engine drip pans and bilges shall be collected with the fast oil change system (FLOCS 15), provided as part of the Lube Oil System. The hose fitting on the oily water tank shall match the quick-connect fitting on the fast-oil-change unit.

Piping from the deck spill containment enclosures shall be routed directly to the oily water tank. Oily water collected by the fast change pump shall be transferred to the oily water tank by piping located in the vicinity of the engines and terminating at ball valves with quick disconnect couplings.

B. TANK, VENT & STRIPPING CONNECTION

The oily bilge tank shall be designed and constructed in accordance with Clauses C130 and C320. The oily tank shall be fitted with a liquid level indicator and a high water level alarm.

The oily water tank shall have a 2-inch vent, with corrosion-resistant flame screen. The vent opening shall be inside a permanent spill containment enclosure located on the main deck. The enclosure shall be fitted with a watertight, hinged lid. Each lid shall incorporate a rain lip and air passage to ventilate the enclosure.

A $\frac{3}{4}$ -inch pipe with pipe plug shall be fitted at the lowest point possible for the tank. This line shall be used for tank cleaning purposes.

C. OILY WATER SEPARATOR

The oily water separator shall be of a USCG approved membrane type capable for efficient handling of free oil and mechanical and chemical emulsions. The separator shall be capable of continuous flow-through operation. It shall produce an effluent containing less than 15-PPM of oil. The separator shall be a skid mounted factory assembled unit and shall incorporate an inlet strainer, a filter and a circulating pump. The separator shall be capable of fully automatic operation after manual starting. Dedicated low-level switch in the oily bilge tank shall automatically stop the separation.

C640 ENGINE COOLING SYSTEM

A remote radiator located on the housetop and driven by an electric motor shall cool the main generator engine. The radiator top shall include the auxiliary expansion tank.

The engine-driven jacket-water pumps shall circulate the jacket-water, mixed with a rust inhibitor and antifreeze, in a closed loop. Flexible connections shall be used between the water piping and the engine. If the engine-mounted pump is found to be inadequate to pump the coolant through the circuit, the Contractor shall provide a booster pump.

An attached radiator exhausting through a louvered opening in the side of the deckhouse, as shown on the contract drawing shall cool the auxiliary generator engine. The louvered opening shall automatically close when the CO2 system is activated.

Exposed piping shall be insulated for protection of personnel and nearby equipment. Connections to the cooler shall be valved.

C645 RAW WATER SYSTEM

The Raw Water System shall serve deck wash and ballast water requirements. The system shall consist of a sea chest and duplex strainer, raw water pump, deck wash stations, and necessary piping system including branch connection for the ballast pump.

The sea chest shall be located as shown on the contract drawing and shall be sized and installed in accordance with the ABS Rules. The sea chest shall be vented. See contract section C325 for details. The water entering the sea chest shall flow through a strainer basket (made of copper nickel) that can be lifted vertically up through a trunk that extends to a hatch on the main deck, where the basket may be removed for cleaning.

The Raw Water pump shall serve the equipment and deck wash requirements and shall be capable of supplying water through 1½ " x 100 ft. hoses and spray-to-stream combination nozzles (attached to deck wash stations) at a nozzle pressure of about 50 psig with any two deck wash stations operating simultaneously. Provide "Y" connections with ball valves at each wash down station. Pump controls shall be local only.

Two deck wash stations shall be provided, one on the port aft side of Deckhouse and one on the starboard aft side of the deckhouse.

The system shall be of "freeze proof" design for use in the freezing temperatures of fall and winter. The discharge header shall be located overhead, and other piping runs shall be arranged to facilitate complete draining during winter. Pipelines passing through unheated spaces shall be insulated.

C650 ENGINE EXHAUST SYSTEMS

A. SYSTEM SIZING REQUIREMENTS

During Detailed Design, the Contractor shall size the exhaust systems based on the final selection of the diesel generator set engines and the boiler. The systems shall be designed and sized not to exceed the engine manufacturer's required maximum backpressure. System installations shall be in strict accordance with the equipment manufacturers' recommendations.

B. EXHAUST SYSTEM REQUIREMENTS

Each exhaust system shall be independently routed from its engine or boiler exhaust outlet through an expanded metal enclosure located on the deckhouse roof. The silencer for each engine shall be located in its respective metal enclosure.

Each silencer shall have the following features:

- 35-db reduction minimum
- Spark arrestor
- High temperature corrosion resistant exterior coating
- Brackets for mounting the mufflers
- Cleanouts in an accessible location

The silencers and exhaust line flanges shall be to ASA 125 lb standards complete with high temperature gaskets and bolts.

Suitable flanged adapters shall be provided and installed at each engine exhaust outlet. Pipe taps, 1/4 inch, shall be provided near each engine outlet to allow for the checking of the system backpressure. Steel plugs shall be provided for each tap. The Contractor is required to provide the equipment necessary and to test each system's backpressure at the exhaust elbows during tests and trials. See contract Section E.

Flanged, lined stainless steel expansion sections shall be provided and shall be sized and located in order to prevent over stressing of the engine connecting flanges, anchor points and piping. The joints shall use multi-ply bellows construction.

C. EXHAUST SYSTEM FEATURES

The piping runs from the boiler or diesel generator set engine silencer outlets and the exhaust outlets shall have the following:

- Rain proof slip joint seals at the exhaust pipe penetrations
- A 45-degree elbow and either a rain cap or a 45-degree mitered pipe, facing up aft, and outboard
- Stainless steel pipe and fittings on sections exposed to the weather
- Exhaust piping above deckhouse roof shall be hinged and shall be provided with a removable expanded metal enclosure to reduce vessel's air draft when passing under overhead obstruction.

Sections of the exhaust system not protected by the expanded metal enclosure shall be suitably insulated. The insulation shall be a non-asbestos type similar to CLAREMAT 1200 insulating blanket. The insulation thickness shall be such that the surface temperature of the insulation does not exceed 125 degrees F. The insulation surface shall be covered by material similar to CLARTEX 1925 A557 pad fabrics. The pad fabrics shall be held in place with lacing hooks and lacing wire.

C660 BILGE & BALLAST SYSTEM

A. DESCRIPTION OF WORK

The vessel shall be furnished with a fixed bilge system for dewatering compartments and a separate ballast system for trimming out the vessel.

B. BILGE SYSTEM

The Contractor shall provide and install all pumps, manifolds, strainers, valves, piping, and gauges necessary to form a complete clean bilge system for each vessel. The oily bilge system is described in contract Clause C637.

The clean bilge system shall be designed and installed in accordance with ABS rules. The system shall be configured to remove water from all watertight compartments. The clean bilge system shall serve:

- Machinery Rooms 2P, 2C and 2S
- Storage Rooms 3P, 3C and 3S
- Storage Rooms 4P, 4C and 4S

A suction strainer located at the low point of each compartment shall protect each bilge suction. Each suction strainer shall have a clear opening three times the total area of the connected suction pipe. The clean bilge system discharges the water overboard through a discharge located at least 12 inches above the full load waterline.

The Contractor shall provide and install a bilge suction manifold having check valves in series with butterfly valves. The manifold shall be located in the same space as the bilge pump it normally serves and shall be capable of being locally controlled and easily accessible at all times. The manifold shall be furnished with one, flanged, blank end for cleanout and inspection.

The Contractor shall supply and install a self-priming, centrifugal pump rated for 50 gpm at approximately 35 ft TDH. The pumps shall be powered by an electric motor drive with the pumps and motors furnished as matched sets from the pump manufacturer. The motor controllers for the pumps shall be set-up with low voltage release. See contract Clause C750.

The Contractor shall submit a system curve and calculations (including NPSH calculations) to the COR for review and acceptance during the Engineering Phase of the contract before procuring the pumps.

C. BALLAST SYSTEM

The Contractor shall provide and install a centrifugal pump, a suction manifold, a discharge manifold, strainers, valves, piping, and gauges necessary to form a complete ballast system. The ballast system shall be designed and installed in accordance with ABS rules. The vessel contains six ballast tanks – three forward and three aft.

The ballast system shall be set up for the following operations:

- Filling ballast tanks
- Discharging ballast tanks overboard
- Transferring water between ballast tanks

The ballast system shall be set up to take on water from the sea chest and discharge water overboard through a discharge located at least 12 inches above the full load waterline.

Discharge/suction butterfly valves shall be installed in the suction manifold to allow the tanks to be lined up to the overboard discharge or the suction of the ballast pump. Both the suction and the discharge manifolds shall have a flanged blank end for cleanout.

The ballast pump shall be a self-priming, centrifugal pump rated for 100 gpm at approximately 40 ft TDH. The pump shall be driven by a 480 VAC, 3-phase motor, with the pump and motor furnished as a matched set from the pump manufacturer. The motor controller for the pump shall be set-up with low voltage protection. See contract Clause C750.

D. BALLAST TANKS

The ballast tanks shall be constructed in accordance with contract Clause C320. Each ballast tank shall be equipped with a:

Tank filling line. The size of the lines shall be determined by the Contractor during Final Design.

Each tank vent size shall be at least 125% of the effective area of the filling line selected above.

1½ -inch sounding tube. The sounding tube shall be as straight as practical, located at the lowest part of the tank and perforated with a ¼-inch diameter hole every 6 inches along its length to facilitate insertion of the sounding rod. The sounding tube shall be flush mounted in the deck and be furnished with a tee wrench. At the tank bottom there shall be installed a 6 inch x 6 inch striking plate of at least 3/16 inch thickness, seal welded to the tank bottom.

E. INCLINOMETERS

The Contractor shall provide inclinometers at the ballast station and outside the Deckhouse. Two inclinometers shall be provided at each location (longitudinal and transverse). The external inclinometers must be protected from weather. The inclinometers shall be single tube design with one bubble type spirit filled glass tube, 0-5° each side of vertical in 1/10° divisions, similar to MOELLER INSTRUMENT CO. Clinometer Model No. 457.

C665 POTABLE WATER SYSTEM

A. GENERAL

The potable water system shall consist of a potable water tank, a pressure set, point-of-use water heaters, a tankless water heater and necessary piping and fittings. Cold-water service shall be supplied to sinks, shower, toilets, hot water heater and the hose bibs in the Head, Boiler Room and the Machinery Room. Hot water service shall be supplied to sinks, shower and the seachest for ice meltdown. Potable water shall also be supplied to the oily water separator, if required for flushing.

B. DESCRIPTION OF WORK

The Contractor shall provide and install all components, piping, valves, and vents necessary to form a complete potable water system.

C. DISTRIBUTION SYSTEM REQUIREMENTS

The system installed shall comply with all applicable guidelines set forth by the U.S. Public Health Service. The system shall be arranged so that the entire system can be gravity drained for cold weather lay-up.

Piping material from the tanks to the pressure sets shall be stainless steel. From the pumps to the remainder of the system the piping material shall be ASTM B-88, type K, seamless copper. The solder connections shall be lead free.

To assist in maintenance and repair, shut-off valves shall be supplied and installed at all hot and cold water piping outlets including the sinks, toilets and showers. These valves shall be quarter-turn ball valves, with each being easily accessible without special tools.

Since the vessel shall operate in a cold climate, no piping shall be run on or against exterior bulkheads or overheads. All potable water-piping running through unheated spaces shall be heat traced and insulated. All hot water piping shall be insulated.

D. POTABLE WATER PRESSURE SET

A 30-gallon (nominal) ASME approved pressure set shall be provided to pressurize the potable water system. The pressure tank shall be equipped with a valved connection so that it can be recharged, if required, from compressed air service outlet by means of a hose. The tank size shall be increased if the draw-down rate of the selected pressure set is less than 10 gallons per cycle.

The pressure set shall include a 10 GPM (nominal) pump for filling the pressure tank from the potable water tank. The pressure rating of the pump shall be based on the requirements of the pressure tank that, in turn, shall be based on maintaining a supply pressure of 30-40 psig to the fixtures. Necessary controls with pre-set "cut-in" and "cut-out" limits shall be included. Also, appropriate pressure reducing or regulating devices shall be provided, where needed, depending upon the pressure limitations of individual items to which potable water shall be supplied.

Where dissimilar metals are in contact they should be isolated by suitable means.

E. WATER FILTERS

1. Tank Inlet Filters

An In-line water filter shall be installed between the fill station and the potable water tank to remove dense particles (sand, rust, grit) and sediment. The filter shall be located to allow easy access for changing and maintaining the filter elements or cartridges.

The filter housing shall have 1½-inch inlets and outlets. A dedicated spanner wrench shall be supplied with the filter housings to assist in changing the filter elements or cartridges.

The filter elements or cartridges supplied shall be capable of removing particles larger than 50 microns. Each filter or set of filters shall be capable of filtering up to 40 gpm of water at 100 psi.

2. Tank Outlet Filters

The outlet of the potable water tank shall be fitted with a high flow, heavy-duty whole house water filter similar to an Aqua-Pure. The filter shall be outfitted with filter cartridges that treat the water for taste\odor\chemicals.

F. HOT WATER HEATER

The winter-summer hook-up shall be such that water always flows through the tankless heater coils in the boiler. One branch line from the tankless heater in the heating boiler shall be used for a sea chest ice-melt connection, and one branch line shall supply hot water to the sinks and the shower in the Head and to the sinks in the Dayroom. The branch line supplying the sinks shall have a backflow preventer to protect against contamination from the sea chest line.

When the boiler is not operating, hot water shall be supplied by a 50-gallon, fast recovery, electric hot water heater.

G. POTABLE WATER TANK

The 1500-gallon potable water tank shall be made of FDA approved polyethylene. It shall be complete with filling, distribution, vent and drain connections, inspection/cleaning ports, level indicator and saddle as follows:

Liquid level indicator similar to a GEMS SureSite. The indicator shall be of all stainless steel construction and shall be suitable for potable water service. The gauge shall be calibrated to show tank levels at $\frac{1}{4}$ graduations.

1-inch drain with ball valve and pipe cap shall be installed on the tank to allow for the draining of the tank. The stripping connection shall be fitted at the lowest point of the tank.

A backflow-preventer shall be installed between the potable water tank and the pressure set.

H. POTABLE WATER FILL STATION

The Contractor shall provide and install a 1½-inch potable water fill and 2 inch vent for the potable water tank. The potable water filling station shall be located on the main deck on the forward bulkhead of the deckhouse.

At the filling station the fill line shall terminate with a brass screw cap fastened by a chain to an adjacent bulkhead or fixture in such a manner that the cap shall not touch the deck when hanging free. The filling connection shall be clearly marked by means of $\frac{1}{2}$ - inch lettering (minimum), stamped on a non-corrosive label plate, or equivalent.

An enclosure shall be provided with a lockable hinged door with staples to hold it open. The door shall be provided with gaskets to prevent the intrusion of water.

Padlocks with three keys, similar to those manufactured by MASTER LOCK, shall be provided to lock the filling station enclosure.

I. HOSE BIBB & FIXTURES

All fixtures (sinks, etc) are described in Clause C437.

The Contractor shall supply and install a hose bib with a hose rack and 50 feet of garden hose in the Machinery Room, Head and Boiler Room, near the makeup feedwater tank. The hose bibbs shall be 5/8 inch and outfitted with a backflow preventer.

If flushing water is required for the oily water separator selected by the Contractor, the Contractor shall install a backflow preventer to prevent contamination of the potable water system.

C667 SANITARY & SEWAGE SYSTEM

A. DESCRIPTION OF WORK

The Contractor shall provide and install all components, piping, valves, and vents necessary to form a complete sanitary and sewage system. The sanitary and sewage system shall comply with all applicable guidelines set forth by the U.S. Public Health Service.

All fixtures connected to the sanitary and sewage system are described in contract Clause C437.

B. SYSTEM CONFIGURATION & REQUIREMENTS

1. General Requirements

The system consists of two separate sections: gray water and black water. The piping material shall be seamless PVC schedule 40, and/or seamless steel ASTM A53 schedule 80. All horizontal drain and sewer piping shall be installed with a slope of 1/4 inch per foot and use the minimum number of elbows. The system shall also be installed with cleanouts and low point drains, and be arranged so that the entire system can be gravity drained for cold weather lay-up.

2. Black Water Service

Black water is collected from the two toilets and routed directly to the MSD treatment plant. The Contractor shall provide and install vent piping for the toilets. The vent piping may be run common where possible with each vent fitted with a flame screen.

3. Gray Water Service

Gray water is collected from the three sinks and the shower and gravity drained overboard. Cast brass "P" traps with clean outs, shall be provided and installed in the drain lines from shower and the sinks. The Contractor shall provide and install vent piping for the gray water drain lines.

C. SEWAGE TREATMENT PLANT

The MSD unit shall be a flow-through, USCG Type II. The MSD equipment shall be sized for 8 crew members, be of stainless steel construction and be self-contained, similar to an Owens Kleen Tank, Type II. The top of the unit must be accessible for inspection, cleaning and maintenance. The cleanout port(s) shall be provided where it shall be most conveniently accessible. Provide an effluent test cock/valve fitting on the discharge side of the MSD unit. Provide a pump and piping system for overboard discharge of the treated sewage.

The MSD shall be installed such that its inlet is as directly below the toilets as possible. The toilets shall be full flush type. Potable water shall be used to flush the toilets.

Protection of the trap seal at the toilet from siphonage, aspiration or backpressure shall be accomplished by appropriate use of waste stack with adequate venting in accordance with the Plumbing Codes. The vent stack for the MSD shall be sized appropriately to the requirements of the selected MSD unit. The Contractor shall also install a flame screen in the vent.

C669 DRAINAGE SYSTEM

The Contractor shall provide and install all components, piping, deck drains, and valves necessary to form a complete drainage system.

The drain lines from the scuppers shall run from deck level down inside the deckhouse where possible to prevent freezing in the winter. The drain lines shall be routed beneath the main deck and exit the hull side at a distance 8 to 12 inches above the waterline.

The drain lines shall be 1-1/2 inch nominal pipe. All deck drains shall be supplied with removable bronze strainer plates similar to BFG model #DK-5015. All overboard discharges for the drains shall be sloped a minimum of 1/4 inch per foot. Clean out plugs shall be installed at the locations of the overboard lines.

The drain headers may be combined with other drain headers and run overboard, but the headers shall not be combined with the bilge, HVAC, or sanitary and sewage systems.

C670 VENTS, SOUNDS AND FILLS

Vents, sounds and fills are required for the various piping systems of the contract. The specific requirements for each system are listed in the respective clause for that system.

C677 FIXED FIRE EXTINGUISHING SYSTEM

A. SYSTEM REQUIREMENTS

The Contractor shall provide and install three separate fixed carbon dioxide (CO₂) fire extinguishing systems. Each system shall be designed and installed in accordance with the standards set forth by the USCG in 46 CFR, subchapter H, subpart 76.15 – Carbon Dioxide Extinguishing Systems, Details and NFPA12, Standard on Carbon Dioxide Extinguishing Systems. NFPA12, Standard on Carbon Dioxide Extinguishing Systems. In addition, the system shall be tested in accordance with NFPA12, Standard on Carbon Dioxide Extinguishing Systems. An statement of fact shall be provided to certify the system has been designed, installed and tested in accordance with NFPA 12. In the event of a conflict or differing requirements, the higher standard shall govern.

One system shall be installed in the main generator room and shall be provided with a remote pull station on the main deck outside the companionway at Frame #17. The second system shall be installed in the auxiliary generator room and provided with a remote pull station on the main deck outside the compartment doorway. The third system shall be located inside the boiler space and shall be actuated automatically by a rate-of-temperature rise system. Fans serving these spaces shall automatically shutdown upon release of CO₂.

B. LOCATION OF CYLINDERS

The CO2 cylinders shall be mounted in racks attached to the deck or bulkhead and located in accordance with ABS and USCG Rules.

Provisions shall be made for the removal and installation of the cylinders. Weighing bars shall be installed for each rack to allow for the weighing of the cylinders.

C. ALARMS & SHUTDOWNS

Audible alarms shall be provided in the spaces protected that shall automatically sound prior to discharge of CO2 into the respective spaces.

A discharge delay of 20 seconds shall be provided in order to allow personnel in these spaces time to evacuate and allow the ventilation system time to wind down. The discharge delay shall not depend on any source of power other than the CO2.

Provisions shall be made for the automatic shutdown of the supply and/or exhaust ventilation fans in the protected spaces. Activation of the CO2 system in the boiler room shall also automatically shut down the fuel pump on the boiler. See contract Clause C685.

D. INSTRUCTIONS & WARNINGS

Instructions and warnings shall be posted in accordance with USCG requirements. As a minimum, the following shall be posted:

At each pull station, clear instructions relating to the operation of the system.

Warnings of protection at the entrance to each space protected.

At the entrance to spaces containing the CO2 bottles, warning that CO2 is stored in the space.

C678 FIRE DETECTION AND ALARM SYSTEM

The Contractor shall provide and install all components, necessary to form a complete electrical fire detection and alarm system to detect and warn of a fire in any of the vessel's spaces. The electrical fire detection and alarm system provided shall meet all applicable USCG, ABS, and NFPA Rules, with all equipment being UL listed. The system shall be installed throughout the main deckhouse as well as in the engineering and machinery spaces, and the forward stores.

The primary power source for the fire detection system shall be the AC electrical system. The secondary power source shall be from a built-in back-up power supply system consisting of two 24-volt DC batteries with battery charger that shall provide a minimum of 84 hours of system operation if the AC electrical service is interrupted. Switchover from the primary source to the secondary source shall be automatic.

The detection system shall be designed to give visual alarm signals and sound audible alarms to be heard throughout the vessel when a fire has been detected. If a fire has been detected in any space on the vessel, the fire detection system is integrated with the HVAC system to shutdown the HVAC system as well as any ventilation fans or heaters serving the spaces except the fans serving the generator and boiler rooms, which are protected by dedicated CO2 systems.

The system shall include electric smoke detectors and heat sensors wired to a detection cabinet. The specific detector or sensor used in a space shall be based on the system manufacturer's recommendations for that space.

The detection cabinet and an alarm panel shall be located in the Day Room. The alarm panel shall include indicator lights for each compartment protected. The panels shall include silencing buttons that allow for the audible alarms to be silenced at any panel.

A red indicating light shall be installed on the deckhouse top, to give a visual signal when the fire detection system is activated.

C679 FIRE SAFETY EQUIPMENT

A. PORTABLE FIRE EXTINGUISHERS

The classification of the extinguishers to be supplied and their mounting locations shall be in accordance with the ABS and USCG Rules.

All extinguishers shall be supplied with racks or holders for mounting.

B. FIRE AXES

Two fire axes shall be provided and installed on the vessel. The axes shall be mounted at the main deck level on the exterior deckhouse bulkhead, port and starboard.

C. FIRE CONTROL PLAN

The Contractor shall produce a Fire Control Plan in accordance with the ABS River Rules (Part 4, Section 7, paragraph 7.25.10).

The Fire Control Plan shall be submitted for review and approval by the COR during the construction phase. After approval, an engraved metal copy shall be produced and mounted in the Day Room. The engraved metal copy shall be in accordance with Clause C460 of the contract.

C685 HEATING, VENTILATION AND AIR CONDITIONING

A. DESCRIPTION OF WORK

The vessel shall be heated and ventilated throughout the various spaces shown on the contract drawings. Air conditioning shall be provided in the Day Room, Locker Room, Head and Office. The Contractor shall prepare calculations to design the systems, and shall size, select and install all equipment, piping and ducting.

1. Load Calculations

The Contractor shall perform heating and cooling load calculations in order to size the air conditioning and heating systems. The heating and cooling load calculations shall be submitted, along with cutsheets of the equipment selected, for review and acceptance by the COR prior to the purchase of any equipment by the Contractor.

The heating and cooling loads shall be based on criteria from the SNAME Technical and Research Bulletin Nos. 4-7 and 4-16. Design temperature criteria for Peoria, IL are listed below:

Heat load calculations for the below deck spaces should be based on the assumption that the space ventilation systems will be shut down when the heaters are operating.

- Outside air (cooling): 89⁰ F DB, 74⁰ F WB
- Indoor air (cooling): 75⁰ F DB @ 50% RH
- Indoor air (heating) 70⁰ F (habitable spaces)
- Indoor air (heating) 50⁰ F (storage, machinery, gear lkr)
- Outside air (heating) -4⁰ F

2. Makeup Air Calculations

Outside ventilation air shall be supplied to each air-conditioned space on the basis of 15 cfm/person. For determining the necessary amount of ventilation air to be supplied, it may be assumed that:

- The Day Room has four people
- The Office has two people
- The Locker Room has two people
- The Head requires a minimum of 100 cfm.

3. Ventilation Calculations for Non Air-Conditioned Spaces

The Contractor shall perform calculations to determine the ventilation requirements of the non air-conditioned spaces. The calculations, along with cutsheets of the equipment selected, shall be submitted for review and acceptance by the COR prior to the purchase of any equipment by the Contractor.

For the generator rooms the ventilation requirements shall be based on the air flow rate necessary to maintain the space temperature at 120⁰ F or below – assuming that the outside temperature is 95⁰ F – or to provide 2 air changes per minute, whichever is larger. The calculation should account for the heat radiated from the engines and the generators, as well as all other equipment that may be operating in the space at the same time.

For non air-conditioned spaces other than the generator rooms, the calculated ventilation requirements should be based on the number of air changes per hour as specified below:

Space	Air Changes Per Hour
Machinery Rooms 4C & 4S	10
Storage Rooms 3S, 3C & 3P	10
Storage Rooms 2S, 2C & 2P	10
Gear Locker	10
Boiler Room	20
Weld Shop	10

B. AIR CONDITIONED SPACES

The Day Room, Locker Room, Head and Office shall be air conditioned and heated, as well as ventilated with outside air.

1. System\Equipment Selection

Based on the cooling load calculations, equipment shall be selected for a DX, split-type air conditioning system. The system supplied shall have the following features:

The Office and the Day Room shall each be fitted with its own fan coil unit with thermostatic control mounted in each space, and a two-speed control for the fan.

The Head and the Locker Room shall share a common fan coil unit located in the Locker Room and having a branch supply air duct to the Head. The thermostatic control shall be mounted in the Locker Room, along with a two-speed control for the fan.

The selection of a mounting type (floor, ceiling, or wall) for each fan coil unit shall be determined by the space available within the particular room in which it is installed. Each fan coil unit shall have an independent refrigeration unit located on the deckhouse roof. The refrigeration unit shall have low ambient head pressure control, anti-cycle timer, low and high-pressure switches and coils coated for corrosion protection. The condenser shall be air cooled and the compressor shall be mounted on heavy-duty spring vibration isolators to minimize vibration transmission to the roof.

Each fan coil unit shall have a supply duct, return duct and a makeup air line to introduce the required amount of outside ventilation air into the return side. The rate of outside air shall be controlled with a manually adjustable damper.

Outside air shall be admitted through one or more cowls located on the roof and ducted to the return side of each fan coil unit. Each cowl shall be fabricated of galvanized steel and shall be provided with a stainless steel insect screen and a hinged closure having a latch. All ducting shall be galvanized sheet metal with a SMACNA G90 class coating.

In addition to the DX refrigerant coil, each fan coil unit shall have a hot water coil connected into the boiler heating system (described below). The coil shall be sized according to the calculated heating load requirements of the respective space and the cfm rating of the fan.

Each condensate line from the fan coil units shall be insulated. The condensate lines shall drain together into a common header with the common headers discharging overboard. The condensate drains shall not be combined with any other overboard discharge lines.

2. Fire Detection System Interconnection

Each fan coil unit shall be provided with controls linked to the fire detection and alarm system and shall shutdown with the activation of the fire detection and alarm system. See contract Clause C678.

C. VENTILATION

1. General

Ventilation inlets and outlets contained in cowls shall be fabricated of galvanized steel and provided with stainless steel insect screens and hinged closures having latches. All ducting shall be galvanized sheet metal with a SMACNA G90 class coating. Inlet openings shall be sized to limit inlet air velocity to 1000 fpm.

2. Main and Auxiliary Generator Rooms

The Contractor shall provide and install a mechanical supply and exhaust ventilation system in each space to meet the ventilation requirements determined by the above calculations. Supply airflow shall be introduced low in the space and away from the generators. If necessary the supply air shall be ducted to more than one discharge opening to provide satisfactory air distribution. Exhaust air shall be discharged high in the space and as close to the generators as possible.

a. Supply Fans

Each supply fan shall be installed in an opening fitted with an automatic, balanced type louver with blade seal and stainless steel insect screen. The supply fans shall be marine duct axial blowers, similar to Hartzell, series 44 with TEFC, 480 or 208-volt AC, three phase motors. The motors and controls shall be two-speed. The motor controller for each fan shall be set-up with low voltage release. See contract Clause C750.

b. Exhaust Fans

Each exhaust fan outlet shall be fitted with an automatic balanced type damper or louver with blade seal and stainless steel insect screen. The exhaust fan in the main generator room shall be marine type duct axial blowers or propeller fans, similar to Hartzell, with TEFC, 480 or 208 volt AC, three phase motors. Air in the auxiliary generator room shall be exhausted by a roof top centrifugal ventilator similar to the Penn Ventilator Domex. The motors and controls shall be two-speed. The motor controller for each fan shall be set-up with low voltage release. See contract Clause C750.

c. Fire Suppression System Interconnection

Provisions shall be made for the automatic shutdown of the supply and exhaust ventilation fans and the automatic closure of the louvers of the supply and exhaust ventilation fans for the generator rooms upon activation of the CO2 fixed fire suppression system. See contract Clause C677.

3. Machinery Spaces

Machinery Rooms 4C and 4S shall each have a natural supply inlet and a mechanical exhaust outlet.

Exhaust fans shall be marine duct axial blowers, similar to Hartzell, series 44 with TEFC, 480 or 208 volt AC, three phase motors. The motors and controls shall be two-speed. The motor controller for each fan shall be set-up with low voltage release. See contract Clause C750.

Provisions shall be made for the automatic shutdown of the exhaust ventilation fan upon activation of the fire detection system. See contract Clause C678.

4. Storage Rooms

Storage Rooms 2P, 2C and 2S shall be cross ventilated by natural supply and mechanical exhaust. Storage Rooms 3P, 3C and 3S shall likewise be cross ventilated. The Contractor shall provide supply air deck cowls outboard of Storage Rooms 3P and 2P, and exhaust air deck cowls outboard of Storage Rooms 3S and 2S to effect this arrangement. The cowls shall be constructed as described above.

Exhaust fans shall be mounted in the exhaust air cowls. The fans shall be marine duct axial blowers, similar to Hartzell, series 44 with TEFC, 480 or 208 volt AC, three phase motors. The motors and controls shall be two-speed. The motor controller for each fan shall be set-up with low voltage release. See contract Clause C750.

Provisions shall be made for the automatic shutdown of the exhaust fans upon activation of the fire detection system. See contract Clause C678.

5. Head

The Contractor shall provide and install a 150-cfm, roof-mounted ventilator fan for the Head, which shall provide ventilation for the Head and shall exhaust the makeup air introduced into the Locker Room and Head spaces by the fan coil unit. The fan shall be wired to operate whenever the fan coil unit is running.

Provisions shall be made for the automatic shutdown of the exhaust fan upon activation of the fire detection system. See contract Clause C678.

6. Office and Day Room

The Contractor shall provide and install separate roof-mounted ventilator fans for the Office and the Day Room, which shall be rated to exhaust the makeup air introduced into those spaces by their fan coil units. The fans shall be fitted with automatic balance type dampers and insect screens. The fan shall be wire to operate whenever the fan coil units are running.

Provisions shall be made for the automatic shutdown of the exhaust fan upon activation of the fire detection system. See contract Clause C678.

7. Welding Shop

The Welding Shop shall have a wall mounted propeller type exhaust fan located as shown on the Contract arrangement drawing. The unit shall be furnished with a 2-speed, TEFC AC motor.

Two 12" x 24" louvered openings shall be provided in the starboard side walls of the Welding Shop for natural ventilation supply air to the space. The openings shall be similar to Penn Ventilator Model OFT and shall have 4-inch wide, 16-gage galvanized steel blades.

Fan speeds shall not exceed 1800 rpm.

The Contractor shall also provide a welding fume exhaust hood over the welding bench area.

Provisions shall be made for the automatic shutdown of the exhaust fan upon activation of the fire detection system. See contract Clause C678.

8. CO2 Room

A gooseneck vent in the main deck above shall naturally vent the CO2 Room. The vent shall be furnished with a stainless steel insect screen.

9. Gear Locker

The Gear Locker shall have a roof-mounted ventilator type exhaust fan fitted with an automatic balanced type damper with and stainless steel insect screen. The unit shall be furnished with a single-speed, TEFC AC motor.

An adjustable louvered opening shall be provided in the wall for natural ventilation supply air to the space. The opening shall be similar to Penn Ventilator Model OFT and shall have 4-inch wide, 16-gage galvanized steel blades.

10. Boiler Room

A positive pressure shall be maintained in the boiler room by the ventilation system. A roof-mounted cowl containing a duct axial fan shall provide the ventilation supply air to the space. The supply fans shall be marine duct axial blowers, similar to Hartzell, series 44 with TEFC, 480 or 208-volt AC, three phase motors. The motor controller for each fan shall be set-up with low voltage release. See contract Clause C750.

Provisions shall be made for the automatic shutdown of the exhaust fan upon activation of the fire detection system. See contract Clause C678.

Air shall be exhausted naturally through a balanced type louver in the outside door to the space. Whenever the fan shuts down, the louver in the door shall automatically close.

E. HEATING

1. Description

A hot water heating system shall handle the heating requirements of the rooms by a combination of fan coil units and hydronic convectors. It shall also be used to supplement the domestic hot water and ice melting requirements.

The system shall consist of an oil-fired water-heating boiler, a circulating pump, heating coils, makeup feed tank and expansion tank.

2. Heaters

As indicated above, the DX fan coil units serving the air-conditioned spaces shall be furnished with hot water coils sized to satisfy the heating requirements of the Office, Head, Locker Room and Day Room. Additionally, the Contractor shall provide a fan coil unit in the Weld Shop for heat only. The latter unit shall have supply and return ducting, as well as makeup air ducting to a small roof mounted cowl to provide a sufficient quantity of outside air.

All other heated spaces on the vessel shall be serviced by hydronic convector heaters installed as follows to maintain the spaces at 50⁰ F when the ventilation system is shut down and the outside temperature is -4⁰ F:

LOCATION	QUANTITY
Storage Room 2S	2
Storage Room 2C	2
Storage Room 2P	2
Storage Room 3S	2
Storage Room 3C	2
Storage Room 3P	2
Machinery Room 4S	2
Machinery Room 4C	2
Machinery Room 4P	1
Passageway	1
Auxiliary Generator Room	1
Gear Locker	1

The hot water heating coils of all these units shall have, on the return connection, a 3-way control valve and flow control valve, the latter factory-set for the design flow rate. Water shall enter coil at 200°F and leave at 180°F.

3. Hot Water Boiler

The Contractor shall provide and install an oil-fired boiler with circulating hot water/glycol mix. Note: Automobile anti-freeze, which contains silicates harmful to the heating system components, shall not be used. The boiler shall be rated to meet the total heating requirements of the vessel, as determined by the Contractor's heat load calculation. The boiler shall be similar to Weil McLain, operate at less than 50 psi and be equipped with one tankless water heater, barometric damper, control transformer and manual resets for high temperature limit and low water cut-off. A built-in aquastat in the boiler shall automatically control the operation of the boiler to maintain the leaving water temperature at 200°F.

The system shall include a centrifugal type circulating pump having a branch line to a closed, diaphragm type expansion tank, pressurized at the factory.

The Contractor shall provide a 20-gallon makeup feedwater tank in the Boiler Room for batch replenishment of the boiler water and ethylene glycol solution. The makeup feed tank design pressure shall be 50 psig. The tank shall be furnished with a liquid level gage, an air hose connection located in the top of the tank, an adjustable relief valve, a pressure gage and a 1-inch valved fill line with a funnel. The funnel shall have a hinged cover, and the level gage shall have a protective shield.

The feed water tank shall be connected into the hot water system at the expansion tank. The connecting line shall contain a stop valve and a check valve for isolation from the hot water heating system.

4. Piping System

The piping system shall be designed based on 3 to 6 feet per second water velocity, and all high points in the system shall be provided with automatic air vents. Piping shall be insulated to prevent heat loss and injury to personnel. The insulation on vertical pipe runs shall be protected with aluminum jacket.

5. Controls

Switches to start and stop the boiler shall be mounted on the hot water heating boiler control panel. The hot water circulating pump shall be started separately from a start/stop pushbutton switch mounted close to the pump. A built-in aquastat in the boiler shall automatically control the operation of the boiler to maintain the 200°F leaving water required.

Provisions shall be made for the automatic shutdown of the boiler fuel pump upon activation of the fire detection system. See contract Clause C678. The motor controllers for the fuel pump shall be set-up with low voltage release. See contract Clause C750.

C690 COMPRESSED AIR SYSTEM

A. DESCRIPTION OF WORK

The Contractor shall provide and install all equipment, components, and piping required for utility air service functions, such as air tools.

The Contractor shall submit calculations performed to determine the size of the ship's service system components (air receivers, air compressors, etc). The calculations along with cut sheets of the equipment selected shall be submitted for review by the COR prior to the purchase of any equipment by the Contractor.

B. AIR COMPRESSOR

The Contractor shall provide an air compressor, rated at about 16 to 20 SCFM and 175 psig. The air-compressor shall be electric motor driven and shall be complete with safety devices. The control system shall include pressure-switch actuated cycling feature with "cut-in" at 125 psig and "cut-off" at 175 psig. An air-type after-cooler shall be incorporated in the package.

The compressor shall be furnished with an air intake filter and a moisture separator with trap.

The compressors shall be mounted in the lower machinery room on vibration isolators having a transmissibility of 20% or less.

C. PIPING & EQUIPMENT

Piping for the compressed air systems shall be seamless black iron. All branch lines shall tee off the top of the main header or supply line. Piping shall be sized such that the pressure drop between the source and the consumer does not exceed 10%. The source for this purpose shall be the pressure tank or pressure reducing station, whichever is nearer.

A separator/filter with automatic drain shall be provide immediately downstream of the compressors. The drain shall be piped to a drain pan.

Reducing stations shall be provided as necessary to reduce the system air from 175 psig to the required operating pressures of the end users.

D. SERVICE AIR STATIONS

Service air stations shall be provided as follows:

- Weld Shop (2)
- Boiler Room (1) – for makeup feed water injection and expansion tank recharging
- Machinery Room 4C (1) – for potable water pressure set tank recharging
- Aft Port Side Spud (1)
- Forward Starboard Side Spud (1)
- Machinery Room 4P (1)

Each air tool station shall be equipped with a filter/regulator/lubricator unit rated to operate between 0-125 psig.

E. AIR RECEIVER

One, 80-gallon, horizontal air receiver having the following features shall be installed with the compressor.

Constructed and certified in accordance with the ASME Code for Unfired Pressure Vessels. Each receiver shall be stamped and an ASME Certificate of Inspection shall be furnished with the receiver.

The design, fabrication, and testing of the air receivers shall be in accordance with the ABS Rules (which also requires survey at the plant of manufacture for fabrication and testing).

Supplied with an automatic condensate drain valve to allow for the removal of accumulated oil and water. The valve shall empty into a drain pan located beneath each receiver.

Provided with a pressure gauge and relief valve.

C692 ALARM SYSTEMS

A. GENERAL ALARM SYSTEM

A General Alarm System shall be provided and installed in accordance with USCG regulations.

Bells shall be installed throughout the vessels as general emergency alarm signals. The tone of the bells shall be different from that of the Fire Detection System. See Clause C678. In addition to the bells, red flashing lights or red rotating beacons shall be installed in areas with high background noise. Lights and bells, shall be installed in the vessels as follows:

- Main Deck Interior – Bell in passageway, Boiler Room and Gear Locker.
- Main Deck Interior – Bell and light in Auxiliary Generator Room.
- Main Deck Exterior – Bell at aft and forward ends of deckhouse
- Hold – Bells in Storage Rooms 2C and 3C, and Machinery Room 4C
- Hold – Bell and light in Machinery Room 4P (Main Generator Room)

A 12-volt DC battery and battery charger shall be provided and installed for each system. For details of the battery and battery charger, see contract Clause C706. The General Alarm panel provided shall be similar to those manufactured by J-Box, Marrero, LA (www.jboxinc.com) and comply with USCG, 46 CFR, subpart 113.25.

The General Alarm bells and lights shall be marked in accordance with contract Clause C461.

B. WATERTIGHT DOOR ALARM

The Contractor shall provide and install a strobe light alarm at the watertight door alarm to indicate that the watertight doors in the vessel are open.

C700 ELECTRICAL SYSTEM

C701 GENERAL REQUIREMENTS FOR ELECTRICAL SYSTEMS

The design, construction and installation of all system components shall be suitable in all respects for marine service and the intended application. All system components shall be furnished new and unused.

The design ambient temperature for all electrical equipment in machinery and boiler spaces shall be 50 degrees C and all current carrying conductors shall be copper. The design ambient temperature for motors is defined in contract Clause C750.

Equipment shall be located and oriented as conveniently as practicable for operation and maintenance. All equipment shall be accessible for removal, servicing and adjustment without dismounting or removal of other equipment.

All deck mounted electrical equipment shall be bolt mounted on a standard marine level foundation made up of steel angle frame.

Unless otherwise specified, all equipment, materials and installation shall be in accordance with all applicable rules, regulations and recommendations contained in the current issue of the publications listed in Clause C003, including any revisions that have been published in the Federal Register prior to the date of this contract.

Where not otherwise specified, all machinery, equipment, materials and installation shall be with applicable IEEE, NEMA, NEC, and ANSI standards and codes. All the equipment furnished shall bear the approval of the Underwriters Laboratories, where applicable. Contract references to specific sections of codes, rules and standards in these specifications are intended to emphasize specific salient items. All equipment and design shall be furnished in compliance with all applicable sections of the codes, rules, and standards cited in Clause C003 and Clause C004.

C702 ELECTRICAL EQUIPMENT & CABLING MARKING

A. EQUIPMENT MARKING REQUIREMENTS

All electrical equipment shall be provided with standard label plates indicating manufacturer, model number, and electrical characteristics (operating voltage, phase, amperage, etc.). The nameplates, serial number plates, identification tags, etc. that are installed on the equipment shall remain in place on the equipment as furnished by suppliers. The Contractor shall use caution during construction to not damage or paint over nameplates or tags. Damaged nameplates or tags shall be replaced prior to Final Acceptance.

The Contractor shall install identification labels for all equipment. All nameplates and notices shall be stamped or engraved on brass or plastic plates. All weather exposed nameplates, notices, and markings shall be of brass.

All distribution panels shall be labeled with designation plates. All breakers in the distribution panels shall be numbered and the panel identification cards filled out to identify the breaker's service. See USCG, 46 CFR, subchapter J, paragraph 111.40-11.

All other controls, gauges, switches, etc., shall be labeled with phenolic label plates to permit operation of the vessel. This includes pilothouse equipment as well.

B. CABLE MARKING

All interconnecting cables and wiring shall be marked at each termination and at each watertight bulkhead or deck with circuit or system identification. Power distribution wiring shall be marked to indicate phase and polarity. All cables shall be suitably identified throughout their length with cable tags identifying the circuit designation.

The tags are to be fabricated from strip aluminum or bronze with raised lettering and shall be securely fastened to the cable by banding.

Cable identification shall be in accordance with the electrical cable schedule developed per contract Clause C725.

C. IDENTIFICATION OF MOTOR CONTROLLERS

Each motor controller and motor control center shall be marked in accordance with USCG, 46 CFR, subchapter J, paragraph 111.70-3(d).

D. SHORE POWER IDENTIFICATION

The Contractor shall install an identification plate for the shore power receptacle in accordance with the ABS River Rules (Part 4, Section 4, paragraph 4/4A4.7.5).

C703 ELECTRIC SYSTEM

The electrical system shall consist of two, battery-started diesel generator sets (one main and one auxiliary) with associated switchboard, motor control, distribution panels, transformers, cabling, receptacles, shore power connections, lighting, etc.

The generators and switchboard are dedicated to supplying power to the Barge auxiliaries and lighting.

The electrical system shall have the capability of receiving shore power. Shore power connection shall be provided and connected to the distribution system for supplying power to the vessel's shore power load requirements. The shore power supply system shall be 480V, 3-wire, 3-phase, 100 AMP.

Remote stop controls for the diesel generator sets shall be provided in addition to the local controls, and located in the Deckhouse near the stairway.

For control schemes for various driven equipment (pumps, winches, ventilation units, etc.) refer to respective Sections.

See Clause C733 for the diesel-generator sets.

The electrical system shall be provided as a completely designed, coordinated and installed system ready to provide power and control for vessel operations. Design and installation shall be in a professional manner and be in compliance with 46 CFR, ABS, NEC and all applicable Codes and Standards.

All electrical equipment shall be similar to Square D with the exception of the main generator controls and motors.

C705 AC ELECTRICAL SYSTEMS

A. PRIMARY POWER SYSTEM

The primary power system supplied for the vessel shall be rated as a 480 volt AC, 3-phase, 3-wire, 60 Hz, ungrounded system. Power to this system shall be supplied by the generator sets or through shore power.

B. SECONDARY POWER SYSTEM

The secondary power system supplied for the vessel shall be rated as a 208Y/120 volt AC, 3-phase, 4-wire, 60 Hz, grounded system. Power to this system shall be supplied from the main switchboard through a 75 KVA 480V-208Y/120V step down transformer.

C706 DC ELECTRICAL SYSTEM

A. DESCRIPTION OF WORK

The Contractor shall supply and install a 12-volt DC electrical system for the communication equipment and emergency lighting. A reference drawing 665-A720-02 has been provided for guidance in designing the 12-volt DC system. The system components shall be sized based on the DC Load Analysis calculated per contract Clause C710 and a One Line Diagram (DC) shall be prepared for the system in accordance with contract Clause C720.

The DC system power supply, battery charger, battery and distribution panel, shall be located in the Machinery Space.

For reference, systems requiring DC power that are not part of the DC systems are the Fire Detection & Alarm System (contract Clause C678), the General Alarm System (contract Clause C692), and the starting battery systems supplied for one of the diesel generator sets and the diesel driven fire pump engine.

B. DC SYSTEM PANELBOARD

A DC distribution panel shall be provided and installed similar to those manufactured by Paneltronics. The DC panel shall include, but not be limited to the following basic components and features:

- Power available light with dimmer switch
- Line voltage meter
- Load current meter

C. BATTERIES & BATTERY CHARGERS

1. Battery Requirements

All batteries provided shall be suitable for marine use and shall be rated for a minimum of 200 ampere-hours.

The Contractor shall provide and install 12-volt DC batteries for the 12-volt DC system and for the General Alarm System. The size of the 12-volt DC system battery shall be based on the Load Analysis performed per contract Clause C710. The General Alarm System battery shall be sized in accordance with contract Clause C692.

For starting the vessel's diesel generator sets, the Contractor shall supply and install a 24-volt DC battery bank. Charging of the 24-volt DC starting battery bank shall also be accomplished by its respective 24-volt DC engine alternator attached to the generator set diesel engines. See Clause C735.

The 24-volt DC starting battery bank shall be installed in the Generator Room. Each battery or set of batteries shall be placed in vented, high-density, polyethylene boxes with lockable hinged covers.

2. Battery Chargers

For the 12-volt DC system and the General Alarm System, the Contractor shall supply and install a battery charger for each system similar to a La Marche, model A41 series. Each charger supplied shall be USCG listed for marine service and built to carry continuous loads. The battery chargers for the 12-volt DC system and the General Alarm System shall be sized to meet the power requirements for that respective system's batteries.

For the 24-volt DC starting system, the Contractor shall supply and install a battery charger similar to a La Marche model ESC battery charger. The battery charger for the 24-volt DC starting system shall be sized to meet the power requirements for the generator set diesel engine starting batteries. The battery chargers shall be mounted in the Generator Room and be suitable for operation in 50 degrees C.

The input voltage for all chargers shall be 120/240 volt AC, 60 Hz and all chargers shall be supplied with ammeters.

3. Overload & Reverse Current Protection

Overload and reverse current protection for the battery conductors shall be in accordance with USCG, 46 CFR, subchapter J, paragraph 111.15-25.

C710 LOAD ANALYSIS

A. AC LOAD ANALYSIS

The Contractor shall develop a complete load analysis for the 480 volt and 208Y/120 volt AC electrical system based on the actual equipment selected for installation. The load analysis shall be set up for the following modes:

- Summer – Day
- Winter – Night
- Summer - Shore Power
- Winter – Shore Power

B. DC LOAD ANALYSIS

The Contractor shall develop a complete load analysis for the 24-volt DC and 12-volt DC systems based on the actual equipment selected for installation. Each load analysis shall be set up for the following modes:

- Summer - Day
- Winter - Night
- Emergency Condition

C715 FAULT CURRENT ANALYSIS & CIRCUIT BREAKER COORDINATION

The Contractor shall prepare a complete detailed fault current analysis and circuit breaker coordination study.

The fault current analysis shall demonstrate that all protective devices such as fuses and circuit breakers have sufficient short circuit breaking and making capacities. A listing of all protective devices, their locations, use, manufacturer, model, and interrupting rating shall be submitted with the fault current analysis.

The circuit breaker coordination study shall demonstrate that only the circuit breaker closest to the fault shall open under short circuit conditions.

Copies of time-current characteristics for all breakers involved in the coordination study shall be submitted with the study.

C720 ONE LINE DIAGRAMS

The Contractor shall develop a One Line Diagrams during the Final Design Phase to provide a balanced 3-phase load and shall install the equipment accordingly.

Catalog cut sheets shall be provided for all AC system and DC system components with the submission of the respective system's one line diagram.

C725 CABLING REQUIREMENTS

A. VOLTAGE DROP & CABLE SCHEDULE

The Contractor shall prepare separate cable schedules for all circuits in the AC electrical system and for all circuits in the DC electrical system.

A voltage drop calculation shall be included on each cable schedule for each circuit. For each AC circuit, a 5% maximum voltage drop is allowed from the switchboard to the connected load. For each DC circuit analysis, a 5% maximum voltage drop is allowed from the DC power source to the connected load.

The cable schedules and voltage drop analyses shall be submitted to the COR for review prior to the Construction Phase.

B. CABLE REQUIREMENTS

Cables shall be similar to L.F. GAUBERT, Specification #474, TNIB Series, 90oC rated, armored, USCG & ABS approved. Armored cables used shall be basket weave armor (aluminum jacket) in accordance with IEEE-45 or equivalent (as classified by UL as IEEE-45 equivalent). The armored cable shall be installed grounded at both ends.

The Contractor shall select the size of the cables based on the voltage drop analysis and the current distribution requirements from the one line diagrams. All cables for receptacle circuits shall be 12 AWG or larger.

All wiring shall be clipped and bracketed to provide straight, vertical and horizontal runs throughout the vessel. Care shall be taken to run all power cables separate from all control signal cables in order to avoid field interference.

All cable installations shall be supported on galvanized steel brackets, and shall comply with all applicable provisions of IEEE-45 Clause 10. Cable supports shall be heavy enough to bear the weight of cables without bending, and all supports shall have rough or sharp edges removed so that cable armor shall not be damaged. Horizontal runs of cable shall be supported by brackets spaced every 2 feet. Vertical runs of cables shall be supported every 2 feet with individual cable straps and bar hangers or brackets.

Soldering shall be performed only with resin or other neutral flux. Ends of all wires not tinned by the cable manufacturer shall be tinned before securing to terminals or before applying lugs. Solderless lugs shall be used wherever practicable. Terminals or lugs that are to be soldered to cable ends shall first be cleaned and tinned or treated with a neutral flux to ensure a good bond.

Connections to equipment and terminal boards shall be made with compression type connectors.

Ring tongue compression terminals shall be used for all control terminations. Ends of all cables shall be sealed against moisture by taping in combination with insulating compounds or other approved methods.

Cable penetrations throughout non-watertight bulkheads and decks shall have ample bearing surfaces. Cable penetrations through watertight decks or bulkheads shall use multi-cable transits similar to the ROX System or brass or steel stuffing tubes. Multi-cable transits shall be installed with spares to allow for the addition of cables. Enclosure penetrations shall use brass stuffing tubes.

Cable tray shall be routed throughout the vessels avoiding mechanical and structural interference.

Cable trays shall be similar to KINDORF Type J-800.

All cables shall be identified in accordance with contract Clause C702.

The contractor shall provide a 120 VAC 4 plex receptacle and coaxial cable outlet in the Day Room for TV and antenna hook-up in starboard forward corner of Day Room adjacent to elevated corner shelf. Provide TV antenna on mast and install coaxial cable from antenna to outlet in Day Room.

The conduit shall be use for all cables in the shop and run in the bulkheads (behind the sheathing). The conduit should run from the space below up to the outlets so that modification can be made.

C730 LIGHTING & RECEPTACLES

The Barge shall be adequately lighted with fixtures that meet the requirements of Underwriters Laboratories for marine duty. Fixtures shall be installed in the number, sizes and arrangement required to provide the value of illumination required by the Illuminating Engineering Society of North America for Marine Lighting.

Sufficient lighting shall be provided to maintain an illumination level at 30 Ft/candles in the welding shop.

All fluorescent type lamps shall be rapid cold start and cool white.

Interior lighting fixtures shall be fluorescent, and shall be controlled by a switch at each entrance.

Fluorescent lights installed over the mirrors in the restrooms shall be on GFCI protected circuits.

Marine rated, 500-W quartz\halogen lamp floodlights similar to Phoenix model MS500QH shall be provided and installed on the vessel and located at the side of the Deckhouse (2 forward in front of the shop and 2 for each side). The contractor shall provide one floodlight at each piece of spud machinery to illuminate the spud. Each of the (2) floodlights shall have an individual switch. The contractor shall provide (2) 500W searchlights similar to Phoenix model MRS56/500S on the housetop.

Exterior deck lighting fixtures shall be watertight, incandescent type fixtures for deck lighting on the exterior of the deckhouse.

Duplex receptacles shall be provided every 10 ft for each wall in each compartment/room.

All interior convenience receptacles shall be rated for 2 pole, 3 wire, 15 amp or 20 amp, 125 volt AC service. Every two duplex receptacles shall be installed with a separate circuit.

All receptacles, including GFCI receptacles, shall be hospital and/or industrial/institutional grade receptacles similar to those manufactured by Hubbell.

Single non-GFCI 20 A 120 VAC receptacle shall be installed in the Day Room for appliances. Each receptacle shall be on an individual circuit.

Provide 10 duplex non-GFCI 15 A 120 VAC receptacles in the office for appliances.

All exterior receptacles shall be watertight. They shall be located where they are protected and do not pose an obstruction. Ground fault circuit interrupters shall be provided for all receptacle circuits.

Exterior, waterproof, GFCI duplex receptacles shall be installed on each side of the deck house (16 receptacles) and 12 receptacles on the weather deck.

The contractor shall provide three DC warning light/beacons at the top of the deck house: one to be white for power out, the second to be blue for freeze alarm and the third to be red for fire.

Emergency lighting shall be provided, and suitably located for safe egress, with additional lighting provided at the main switchboard, and the motor control center.

The emergency lighting system shall be battery-powered fixtures that use a single dedicated battery set as their power source. The system shall have a transfer switch that shall be normally open when there is generator or shore power. Shall one of these power supplies not exist, the switch shall close and allow power to be fed to the emergency lights. There shall also be a manual switch with a cover at the top of the companionway. This switch shall be able to open the circuit and disconnect the lights from the batteries thus turning them off and not draining the batteries. The power supply from the battery bank shall have overload, short-circuit and ground-fault protection, and fusible disconnect switch.

A battery bank being composed of two 12-volt batteries connected in series. A self-regulating battery charger with an ammeter similar to C-Charger 93-2420-EL-A shall be provided for charging the 24-volt DC battery bank from the 208Y/120 VAC distribution system. All batteries provided shall be suitable for marine use and shall be rated for a minimum of 200 ampere-hours.

The contractor shall provide two 480-VAC, 3-phase, 60A, fusible disconnect switches and two 280VAC, 3-phase, 150A, fusible, disconnect switches in the shop. Actual location to be determined by the COR. Duplex GFCI receptacles shall be installed every 4 ft along the inside perimeter of the shop.

The navigation lighting system shall be set up for 120 volt AC. All navigation lights provided shall be similar to figures 1164 to 1168 series, manufactured by Perko, except the whistle light provided by the air horn manufacturer (see contract Clause C472).

The Contractor shall develop lighting layout during the Final Design Phase.

C733 ELECTRICAL POWER PLANT

A. DIESEL GENERATOR SET REQUIREMENTS

The Contractor shall provide and install two diesel generator sets. The main diesel generator set shall be located below deck in Machinery Room 4P; the auxiliary generator set shall be in the Auxiliary Generator Room on the main deck.

The diesel generator sets shall be 4-cycle marine type, similar to a Caterpillar. The main diesel generator shall have a continuous rating of 150-kW minimum at 0.8 power factor at 60 Hz and 1800 rpm. The auxiliary generator set shall have a continuous rating of 105-kW minimum at 0.8 power factor at 60 Hz and 1800 rpm. The generators shall be set up to supply 480 volt AC, 3-phase, 3-wire, ungrounded, 60 Hz electrical power.

Each generator shall be equipped with an amortisseur winding and shall be capable of delivering 110 percent load for two hours without exceeding permissible limits of temperature rise. Each generator, along with its regulation and excitation systems shall be capable of supporting overload conditions as well as maintaining short circuit currents of such magnitude and duration as required to properly actuate selective tripping of downstream protective devices.

Each voltage regulator shall be a solid-state, volts-per-hertz voltage regulator capable of automatically maintaining constant rated generator voltage throughout the load range of the generator. Each voltage regulator shall be capable of maintaining steady state regulation within 1 percent of rated voltage from no load condition to 110 percent rated load condition and shall include a voltage adjusting rheostat with a plus and minus 10 percent adjustment range.

The voltage dip on each generator shall not exceed 25 percent while starting the largest motor on the vessel across the line with the main bus load at 30 percent capacity.

Each generator shall have a separate voltage regulator for mounting on the switchboard.

Each generator shall have a block heater for the engine and a space heater for the generator power from the 208Y/120VAC main panel.

The generators shall be capable of starting and running the operating load as detailed in the Clause C710. Each generator shall be sized to equal the next standard size generator which is greater than the largest load calculated in the Load Analysis per Clause C710B.

Each diesel engine and generator shall be provided with the following features and options:

- Approved by ABS.
- Voltage droop on each generator that is adjustable.
- The generator shall have a drip proof, guarded enclosure and shall be air cooled and self-ventilated.
- A brushless excitation system and an automatic solid-state voltage regulator.
- An engine mounted fuel pump with a minimum lift of 10 feet.
- Set up for battery start.
- Dedicated DC control system including battery and charger for controls and automatic shutdowns.
- Electronic governor.
- Emergency stop pushbutton.
- Turbocharged-aftercooled.
- Configured as a closed jacket water cooling system using radiators. Coolant level sensors and gauges to be provided.
- Auxiliary expansion tanks and/or larger jacket water pumps if required to handle the cooling system volume.
- A jacketed manifold and dry exhaust system.
- Each engine turbocharger and exhaust manifold shall be insulated or jacketed to maintain an outer skin temperature of less than 125 degrees F.
- Each engine shall be equipped with a crankcase vent filter/collector system similar to a NELSON EcoVent Recirculator. The EcoVent shall be supplied with a manometer and the drain line shall be returned directly to the engine oil sump, below the oil level.
- Each generator supplied with an electric heater.

- The water, lube and fuel lines to all engine connections shall be fitted with USCG and ABS approved flexible connections.
- Each diesel engine oil sump shall be fitted with a ball valve and quick disconnect fitting so that oil can be added to or drawn from the sumps.
- A steel base frame with drip pan under the engine.
- Mounted on vibration mounts in order to isolate engine vibration. See contract Clause C180 for noise and vibration requirements.
- Each engine shall be supplied with lifting eyes and mounting support. The Contractor is responsible for supplying suitable foundations for the engines and generators.
- Switchgear controls and instrumentation shall be provided and installed as outlined in contract Clause C740.
- Load bank testing of the diesel engine and generator shall be in accordance with Section E of the contract.
- Four sets of manuals shall be supplied for the diesel engines and generator sets. See contract Clause H16.
- Spare parts in accordance with contract Clause C805.

The diesel engines and generator sets and all associated equipment shall be installed in strict compliance with the engine manufacturer's recommendations and approved by the manufacturer's field representative.

B. GENERATOR SET STARTING/STOPPING

Each generator set shall be set up for starting and stopping locally, at the generator set. In addition, the main generator shall be provided with a remote start/stop control located at the aft spud winch control panel.

The diesel generator sets shall be electric start. Each generator set shall be provided with 24-volt DC starting, including starter motor, batteries, battery charging alternator, ammeter, and regulator. See Clause C706.

The starting batteries shall be marine, heavy duty, rated in accordance with the engine manufacturer's recommendations. The Contractor shall provide and install a battery box with cover for the diesel engine starting batteries. The battery boxes shall be located in the generator rooms.

C. GENERATOR SET ALARMS & INSTRUMENTATION

The diesel generator sets shall be set up to automatically shutdown upon activation of the following alarms:

- Engine overspeed
- Low lube oil pressure
- High jacket water temperature

Alarms shall be provided for each generator set. The alarm panels shall be located both in the generator rooms and in the Weld Shop. The panels shall be set up such that silencing an alarm at one panel automatically silences the alarm at a second panel.

The alarms shall have both audible and visual signals at both the generator room panel and the weld shop panel. The alarms shall be provided with fault light lock-in circuitry, lockout of additional alarm lights after engine shutoff, alarm silence buttons, and circuit test button.

The following alarms shall be included for each generator set at both the generator room panel and the weld shop panel:

- Engine overspeed
- Low lube oil pressure
- High jacket water temperature
- Low starting battery voltage

The diesel generator manufacturer shall provide a local control panel, with mechanical gauges, installed at each generator set. Each panel shall have, as a minimum, the following instrumentation:

- Engine hour or service meter
- Jacket water temperature gauge (degrees F)
- Lube oil pressure gauge (psi)
- Fuel pressure gauge (psi)
- Tachometer
- Watt meter
- Volt meter
- Amp meter

An instrument panel shall be provided and installed for the main generator set in the Weld Shop. The following instrumentation shall be included on the panel:

- Generator “power available” indicator
- Jacket water temperature gauge (degrees F)
- Lube oil pressure gauge (psi)

C740 SWITCHBOARD & POWER CONTROL

A. OVERVIEW

A switchboard shall be provided and installed for the electrical systems and shall be located as shown on contract drawing #656-B215-01. Front layouts, catalog cutsheets of major components, and diagrams of the switchboard shall be submitted for review by the COR prior to the purchase of any equipment by the Contractor.

The switchboard shall be configured to contain:

- A generator control section
- A shore power and Auxilary generator section
- A 480-volt AC distribution section

The switchboard shall be designed, constructed, and installed in accordance with ABS rules.

B. SWITCHBOARD REQUIREMENTS

1. General Requirements

The switchboard shall be front and rear accessible, and fully serviceable from both the front and the rear, shall be freestanding and adequately supported to resist vibration. And provide for top and bottom cable entry.

The switchboard shall contain electrical/mechanical (safety key) interlocks in accordance in the contract drawing and as stated in paragraph below to prevent paralleling of non-synchronous sources.

The contractor shall provide a selector switch and push button set to be able to open and close the generator breakers and the shore power breakers at the switchboard. The main bus shall only be energized at any given time by the generator set or the shore power.

Space heaters for the switchboard sections shall be provided to prevent condensation within the enclosure during idle periods. The space heaters shall be energized from the ship's service 208Y/120 volt AC system.

2. Main Generator Set Switchboard Section

For each generator set, the associated switchboard section shall include the following components and features:

- Generator power available indicating light.
- Voltage regulator control rheostat.
- Speed control rheostat.
- Voltmeter and selector switch.
- Ammeter and selector switch.
- Frequency meter.
- Generator breaker “CLOSE” and “OPEN” pushbuttons for the each generator.
- Multifunctional Amp transducer.
- Multifunctional Volt transducer.
- Multifunctional Watt transducer.
- Frequency transducer.
- Manual “ON-OFF” switch with indicating light for the switchboard space heaters.
- “ON-OFF-AUTO” switch with indicating light for the associated generator space heater. When in the “AUTO” position, the space heater shall be energized by the thermostat.

3. Auxiliary generator and Shore Power Operation – Switchboard Section

The switchboard shall include a section for monitoring the auxiliary generator and incoming shore power. The switchboard shall include the following components and features:

- Generator power available indicating light.
- Voltage regulator control rheostat.
- Speed control rheostat.
- Voltmeter and selector switch.
- Ammeter and selector switch.
- Frequency meter.
- Generator breaker “CLOSE” and “OPEN” pushbuttons for the generator.
- Multifunctional Amp transducer.
- Multifunctional Volt transducer.
- Multifunctional Watt transducer.
- Frequency transducer.
- Manual “ON-OFF” switch with indicating light for the switchboard space heaters.
- Shore power available indicating light.
- Voltmeter and selector switch.
- Ammeter and selector switch.
- Frequency meter.
- Shore Power breaker “CLOSE” pushbutton for the each shore power.
- Phase sequence/loss system. The phase sequence/loss system for the shore power connection consists of:
 - a. A phase sensing relay with correct phase light (green) and incorrect phase (red)

- b. Three-position shore power phase reversal switch with “normal” and “reversed” settings separated by an “OFF” switch position.

4. Isolation Ground Bus & Ground Detection

The switchboard shall also incorporate an isolation ground bus. Connections shall be made from AC system distribution panels back to the isolation ground bus in the switchboard. Grounding shall then be made to the starboard diesel generator engine.

For ground detection, the switchboard shall also include:

- Ground detection lights and test switch for the 480 volt AC system.
- Ground detection ammeter and test switch for the 208Y/120 volt AC system.

5. Switchboard Breakers

a) General Circuit Breaker Requirements

The interrupting rating of each circuit breaker shall be suitable for the maximum short circuit current available at the point of application as determined by short circuit analysis. The circuit breakers provided shall have a minimum interrupting rating of 10,000A RMS symmetrical at their respective voltage level, and shall be capable of interrupting without damage, the maximum fault current at the breaker from the system.

Circuit breaker coordination and selectivity shall be provided so that, for a fault on any part of the system, the fault is cleared by the protective device that is closest to the point of fault without tripping upstream breakers in accordance with USCG, 46 CFR, subchapter J, subpart 111.51 and ABS-Steel Vessels for Service on Rivers and Intracoastal Waterways Section 4/4A5.1.4a.

b) Generator Sets & Shore Power Sections

The main generator circuit breakers shall be marine type, insulated case, rated for 50°C, equipped with a draw-out feature and electric close, trip and charging motor. The shore breaker shall be of marine type, motor operated electronic trip, molded case rated for 50°C ambient-temperature. Bus bars shall be hard-drawn pure commercial copper and silver plated at all joint and contact areas.

The generator breakers shall be provided with adjustable time delay for under voltage trip devices.

c) 480-Volt Switchboard Distribution Section

Molded case, draw-out type, circuit breakers shall be provided for all of the equipment required for control of the 480-volt, three-phase, 60 Hz equipment, and for the 480-volt AC distribution system.

The 480-volt distribution bus circuit breakers shall be manually operated and provided with inverse time, 50oC ambient-temperature, thermal magnetic trips and shall have interchangeable thermal trip units and adjustable magnetic trips in ratings where available.

Electronic trip circuit breakers shall be provided where required for coordination.

As a minimum, six spare breakers shall be provided. The spare breakers shall have trip ratings representative of the trip ratings furnished for other loads connected to the main switchboard.

Any remaining "spaces" for circuit breakers shall be fitted with plug-in assemblies of appropriate frame size and blank cover plates.

Single-phase loads shall be distributed as evenly as possible among the three phases of the three-phase, 4-wire system, to achieve optimum phase current balance.

C745 DISTRIBUTION PANELBOARDS

A. DESCRIPTION OF WORK

Power and lighting panelboards shall be used to supplement the distribution section of the switchboard for all of the electrical loads on the vessel. Panelboards shall be located so that they are readily accessible.

The panelboards shall be dead front circuit breaker type equipped with molded case circuit breakers. All panelboards shall be fitted with isolation ground bars.

All panelboards shall be equipped with a main circuit breaker or switch for the feed into the panelboard.

All panelboards and breakers shall be marked in accordance with contract Clause C702.

B. AC SYSTEM CIRCUIT BREAKERS

The distribution panelboards shall be connected to feeder circuit breakers in the 480-volt main switchboard as well as to the 480 volt to 208Y/120 volt transformer.

As far as practicable, load distribution shall be such that the distribution panelboards shall feed electrical loads that are located in their respective areas.

Single-phase loads shall be distributed as evenly as possible among the three phases of the 3-phase, 4-wire system, to achieve optimum phase current balance.

The panelboards shall be equipped with molded case circuit breakers with ratings and the number of poles to satisfy system requirements. Plug in type circuit breakers shall be used.

The circuit breakers in all the panelboards shall have quick make, quick break, and trip-free mechanisms. The interrupting rating of each circuit breaker shall be suitable for the maximum short circuit current available at the point of application as determined by short circuit analysis. The circuit breakers provided shall have a minimum interrupting rating of 10,000 RMS symmetrical amperes at their respective voltage levels, and shall be capable of interrupting without damage to the fault current available at the breaker from the system.

In addition, each of the distribution panelboards shall be provided with a minimum of four spare breakers, with trip ratings representative of trip ratings furnished for other loads.

Circuit breakers for the motor controllers shall be in accordance with contract Clause C750. Breakers for the transformer shall be in accordance with contract Clause C755.

C. DC SYSTEM CIRCUIT BREAKERS

The DC system distribution panelboard and circuit breakers shall be in accordance with contract Clause C706.

C750 MOTORS AND CONTROLLERS

A. MOTORS

All motors shall be drip-proof protected, except those exposed to the weather, which shall be waterproof construction. All motors shall be NEMA type, and shall be sized and designed for continuous operation of the driven auxiliary at rated capacity.

All motors shall be designed for an ambient temperature of 50 degrees C.

All motors shall be equipped with anti-friction bearings. All motors using grease-lubricated bearings shall be provided with grease fittings and shall have positive means for preventing grease from being forced out upon the motor windings.

B. CONTROLLERS

All controllers shall have manually reset thermal overload protection, line disconnect device, and integral start/stop push-button set. Controllers arranged for automatic or remote operation shall also be provided with Hand-Auto or Local-Remote selector switch. Exterior mounted controllers shall be mounted in watertight enclosures.

Space heaters shall be provided in all motors 15 HP and larger.

Motor starters shall be across-the-line starters for 15 HP and below. Motors above 15 HP shall have reduced voltage, autotransformer type starters with closed transition soft start. Motor starter control voltage shall be 120 volts.

C. MOTOR CONTROLLER – BREAKER COORDINATION CIRCUITS

Switchboard breakers and panel board breakers for motors and motor controllers shall sized and installed in accordance with the following:

Motor feeder circuit breakers installed in a switchboard section or motor panel shall be rated near to but not more than 250% of the motor FLA.

The motor control circuits shall be in accordance with MDC Sketch #750A.

All motor controllers shall have short circuit and ground fault protection by circuit breaker rated at $AT = 125\% \text{ FLA}$ and $IT = 10 \times \text{FLA}$ of the motor.

See MDC Sketch #750B for the motor circuit logic.

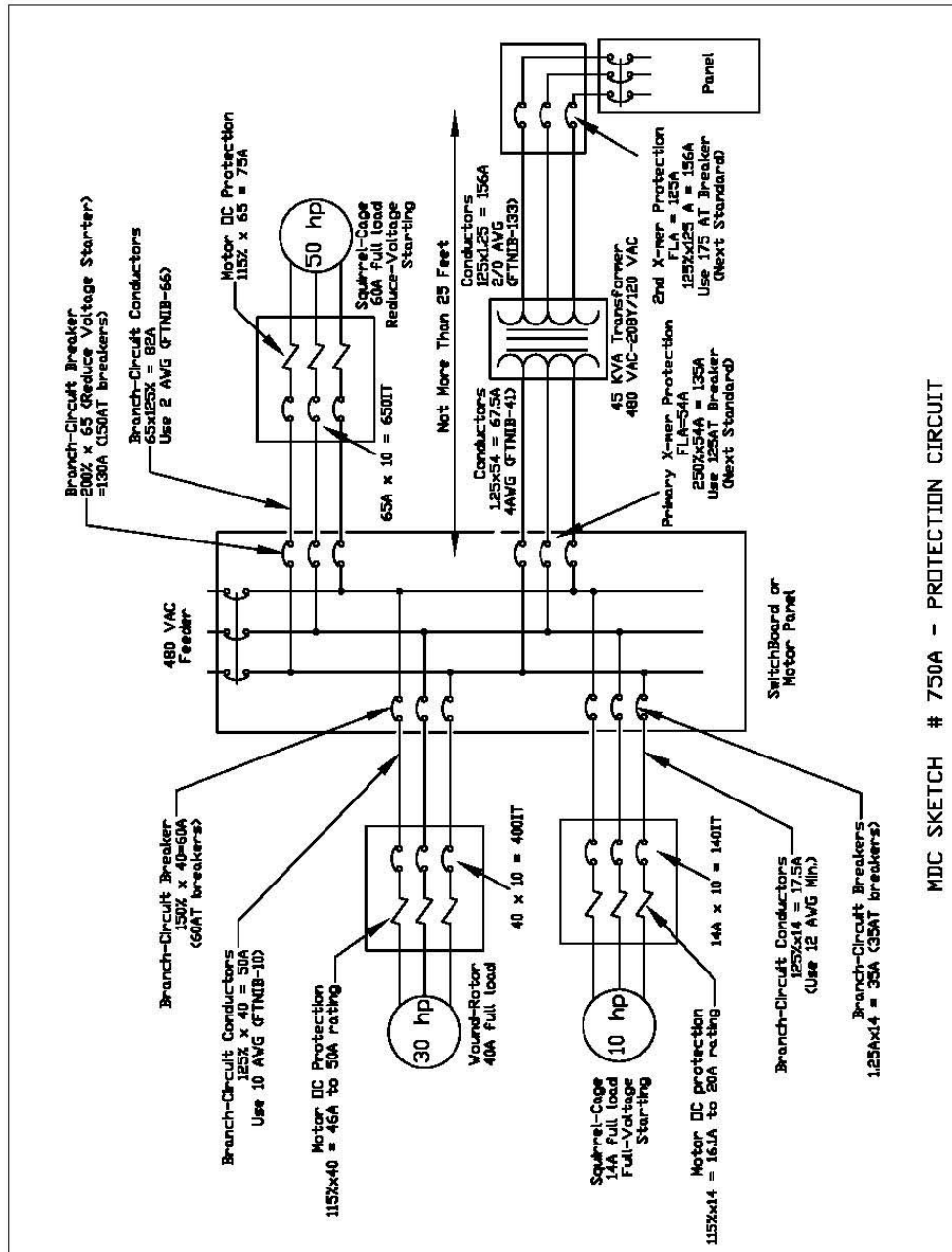
D. MOTOR UNDER-VOLTAGE PROTECTION

All motor controllers shall be provided protection against an under-voltage condition. Protection against under-voltage shall be either low-voltage protection (LVP) or low-voltage release (LVR).

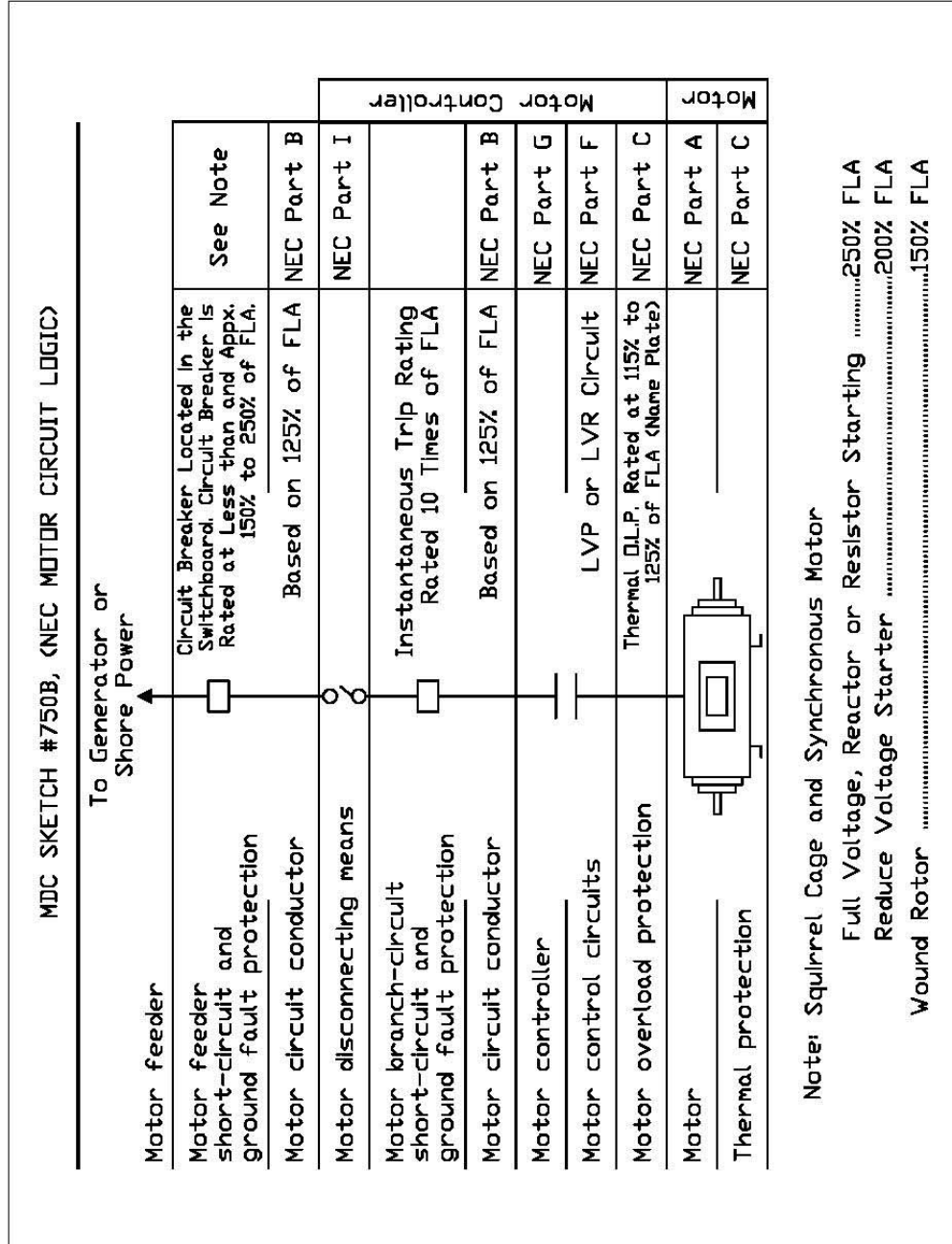
The motor controllers for the following systems shall be provided and installed with low-voltage release (LVR):

- Bilge pumps
- Raw water pump
- Air compressor
- Boiler system

All motor controllers not having LVR shall be provided and installed with low-voltage protection (LVP) unless the motor is less than 2 hp.



MDC SKETCH # 750A - PROTECTION CIRCUIT



C755 TRANSFORMERS

A. TRANSFORMER SIZING REQUIREMENTS

The Contractor shall provide and install one 75 KVA transformer to connect the 480 volt AC, three phase, 3-wire, 60 Hz system to the 208Y/120 volt AC, three phase, 4 wire, 60 Hz system.

B. GENERAL REQUIREMENTS

The transformer shall be three phase, 60 Hz, marine dry type, convection air-cooled and shall be adequately sized to satisfy system requirements.

The secondary system shall be bonded at the transformer.

The Contractor is responsible for providing a foundation beneath the transformer.

C. INSULATION

The transformer shall have class H insulation and copper conductors. The design ambient temperature shall be a minimum of 50oC. The transformer shall be designed to deliver rated KVA continuously without the benefit of internal fans to circulate air. All insulating materials shall be in accordance with NEMA standards.

Provisions shall be made to completely isolate the core and coil from the enclosure. There shall be no metal-to-metal contact. Rubber vibration isolating pads shall be installed by the manufacturer between the core and the enclosure. The core shall then be visibly grounded to the enclosure by means of a flexible grounding conductor.

D. CONSTRUCTION

The enclosure shall be constructed of heavy gauge sheet steel, shall be drip-proof, and shall be given a suitable corrosion resisting treatment. The entire assembly shall be rigid self-supporting construction. Panels shall be capable of being readily open or removed for access to interior for installation, maintenance, and repair.

E. TRANSFORMER CIRCUIT BREAKERS

The transformer feeder circuit breaker shall be sized to be near to but not more than 250% of the primary current. The secondary transformer circuit breaker shall be rated or sized at 125% or the next standard size of circuit breaker. See MDC Sketch #750A.

C760 SHORE POWER

The available shore power at the home base is 480 VAC, 3-phase, 3-wire, 100 amp. Shore powers shall be connected to the vessel through a fixed connection. One connection shall be hard wired directly to a fusible disconnect located near to the PORT AFT spud winch at the main deck level and another located on the starboard and forward sides at the main deck level (see the General Arrangements – 665-A215-01).

The contractor shall provide and install a four conductor #1 AWG 100-foot length of shore power cable. One end of the cable shall be attached to the fusible disconnect and a shore power plug shall be attached to the shore end of the cable. The plug shall be an Appleton model ACP1034CD, 600 volt, 100 amp, 4-pole, 3-wire, style 2.

The contractor shall fabricate an enclosure to allow for the storage of the shore power cable.

The shore power service shall be installed with a pilot line to shore power breaker under voltage device to prevent connecting or disconnecting under load. The shore power circuit breaker shall be self-resetting.

The shore power service shall be labeled for operation in accordance with contract Clause C702.

C765 OFF-VESSEL SERVICE

Off-vessel power service is to be 480 volt AC, 3-phase, 3-wire for 100-amp service.

The contractor shall provide and install two non-fusible disconnects with off-vessel power receptacles located near to the shore power services. The receptacle shall be an Appleton model WSRD 103542 N4SQ, 600 volt, 100 amp, 4-wire, 3-pole and shall be fed through a circuit breaker mounted in the main switchboard and connected to the 480 volt main bus.

The contractor shall provide and install a 4-conductor # 1 AWG 100 feet of cable for off-vessel service. One end of the cable shall be fitted with a plug to match the off-vessel receptacle.

C770 FIRE DETECTION ALARM SYSTEM

An automatic smoke detection and Tell-Tale Alarm System shall be provided on the vessel, in those spaces equipped with a Fixed CO2 Fire Extinguishing System. Smoke detectors and thermal detectors (if required) shall be installed in those spaces in sufficient numbers and locations to suit the space. The system shall operate on 24 VDC power from a self-contained battery, which shall be equipped with battery charger. The battery charger shall be fed from the 120 Volt AC Distribution system. The system shall contain the following devices as a minimum:

- Batteries (24 Volt, 12 hour minimum operating capacity)
- Battery Charger (re-charge batteries to full capacity within 12 hours) (120 VAC/1 phase/60 cycle input)
- Smoke Detectors (24 VDC)
- Thermal Detectors (24 VDC)
- Alarm Lights (24 VDC)
- Alarm Siren (24 VDC)

Batteries shall be 24 volt, sized to meet the requirements as outlined in 46 CFR 111.15 and 113.25. Batteries shall be mounted in an approved battery box with suitable ventilation.

The annunciator/alarm panel shall be installed in the Day Room. It shall be the Contractor's responsibility to distribute the smoke detectors and thermal detectors and thermal detectors to meet the manufacturer's circuit channel loading.

The Fixed CO2 Extinguishing System shall be fitted with suitable delayed discharge so arranged that the alarm shall be sounded for 20 seconds before the carbon dioxide is released into the space.

The Fixed CO2 Extinguishing System shall be equipped with a normally closed dry contact rated for 20 AMP that opens at release of the carbon dioxide. This dry contact shall be wired to the ventilation fan starter for the space and shall shut down the ventilation upon release of the carbon dioxide.

Provide an additional annunciator/alarm panel in the weld shop. It shall be located so that it is readable by personnel standing outside of the deckhouse and looking through a window.

Provide a red fire alarm beacon on the mast.

Provide commercial carbon monoxide detectors in the day room and office Machinery Rooms. One control panel located in the Day room, remote visual annunciator in the weld shop; complete w/ flashing beacon All cables for the fire alarm system shall be AWG #16 or larger.

C800 SPARE PARTS

The manufacturer's recommended spares/filters and special tools shall be provided for engines, generator sets, and major equipment.

Spares shall be provided for all critical parts, start-up parts and maintenance parts to enable the vessel to operate for 2,500-hours without lost time due to awaiting parts.

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PART I - THE SCHEDULE - SECTION C
DESCRIPTION/SPECIFICATION/WORK STATEMENT

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PART I - THE SCHEDULE - SECTION C
DESCRIPTION/SPECIFICATION/WORK STATEMENT

C000 GENERAL

C001 GENERAL MISSION STATEMENT

The Marine Design Center of the U.S. Army Corps of Engineers has issued this solicitation for acquisition of a welded steel barge in support of the civil works maintenance and repair mission of the Rock Island District.

The vessel shall be constructed in accordance with the provisions of this specification, and as shown on the Contract and Reference Drawings.

The Contract drawings provided reflect the ABS approved, as-built drawings for two deck cargo barges previously built and assigned ABS Certificate Nos. 9735821 and 9375823.

The intent of this contract is to build one deck cargo barge in accordance with the Contract drawings, except as noted in Contract Clause C005. Any modifications required of the provided drawings will also require ABS review and approval to ensure ABS classification, in accordance with Contract Clause C004.

The vessel shall be a flat deck type barge of welded steel construction. The barge shall have raked ends, sheer and a pitched deck. This barge will be used primarily for the transport of equipment and materials and some rock in conjunction with Rock Island District's project maintenance fleet.

C002 PRINCIPAL CHARACTERISTICS

Length (Molded)	149'- 10 3/4"
Length (Overall).....	150'- 0"
Beam (Molded)	34'- 9 1/4"
Beam (Overall).....	35'- 0"
Depth (Molded, at side)	6'- 0"
Depth (Molded, at CL).....	6'- 4 3/8"
Design Draft (Loaded)	4' - 1"
Bow	Raked
Stern	Raked
Design Deck Loading	1,000 PSF

C003 DESIGN STANDARDS

The barge shall be designed and constructed in accordance with the contract drawings, the latest edition and interpretations of the rules, regulations, requirements and standards of the Legislation, Regulatory Agencies and technical organizations listed as follows or as stipulated in the respective specification clause:

- U.S. Army Corps of Engineers, Publication No. EM 385-1-1; "Safety and Health Requirements Manual." May be viewed at internet web site <http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm>
- American Bureau of Shipping (ABS) "Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways."
- American Bureau of Shipping "Guide For Shipbuilding And Repair Quality Standard For Hull Structure During Construction."
- National Shipbuilding Research Program Publication NSRP 0490, January 1998; "Industrial Standards for Hull Structural Penetrations Design Criteria and Details."
- American Welding Society "Guide For Steel Hull Welding", ANSI/AWS D3.5-85.
- U.S. Coast Guard Regulation 46 CFR Subchapter C - "Uninspected Vessels" (but not for electrical design and installation).
- U.S. Coast Guard Regulation 46 CFR Subchapter J - "Electrical Engineering."

- U.S. Coast Guard Regulation 46 CFR Subchapter S - “Subdivision and Stability.”
- U.S. Coast Guard, Navigation Rules and Regulations, International and Inland.
- U.S. Coast Guard Regulation 33 CFR Part 164, Navigation Safety Regulations.
- U.S. Public Health Service (USPHS) Publication No.393, “Handbook on Sanitation of Vessel Construction.”
- Institute of Electrical and Electronic Engineers Standards, Publication No. IEEE-45 - “IEEE Recommended Practice for Electrical Installation on Shipboard.”
- Illuminating Engineering Society, “Recommended Practice for Marine Lighting.”
- National Electrical Code (NEC).

C004 CLASSIFICATION AND CERTIFICATION

The Contractor shall be responsible for preparing necessary drawings and calculations, obtaining necessary regulatory body reviews and approvals, obtaining necessary inspections and surveys during construction and for the certification and classing of each vessel as follows:

- ABS classification for “Maltese Cross A-1 Barge, for Service on Rivers and Intracoastal Waterways with Reinforcement B notation.”

The Contractor shall bear all expenses associated with the acquisition of the required classing and certifications. The recommended ABS point of contact is Mr. Glenn Ashe, who can be reached by phone, or mail, at: (703) 518-0801, Gashe@eagle.org, or 1321 Prince Street, Suite 200, Alexandria, VA 22314.

For the ABS certificate of classification, the owner shall be listed as “U.S. Army Corps of Engineers, Rock Island District”. The owner’s address for record shall be listed as CEMVR-OP-IM, 257 Grant Street, Peoria, IL 61603.

The vessel is based on barges previously constructed for the U.S. Army Corps of Engineers, Rock Island District, Barges 914 and 916, Marine Design Center Hull Numbers 537 and 538. These barges complied with all the design standards of Clause C003 and were similarly classed by ABS. They were completed in 1997 under contract with Basic Marine, Inc. of Escanaba, MI under BMI Hull Numbers 96-97, and were assigned ABS Identification Nos. 9735821 and 9375823. This information should be used when contacting ABS for review and certification of these vessels.

If the Contractor intends to launch, test, operate, or tow the vessels “out of class,” the Contractor must specifically advise ABS of such intent and incorporate any and all modifications required by that agency for such operation at no additional cost to the Government and with no additional contract time. Any such modification which, in the opinion of the COR, affects the arrangements, operability or suitability of the vessel shall be removed from the vessel by the Contractor at no additional cost or time and the vessel returned to new condition prior to Final Acceptance.

C005 VESSEL IDENTIFICATION

The barge to be acquired through this solicitation has been assigned the following Name and Marine Design Center hull and project number:

MDC Project Number2587

MDC Hull667

Vessel Name*

The MDC hull number shall be used in lieu of "Official Number."

(*) The vessel name shall be provided by the COR at the time of construction. Upon selection of the official name for each vessel by the Government, the Contractor shall incorporate the name into all "as-built" documents. The MDC hull number shall be used in lieu of an "Official Number."

C006 SCOPE OF WORK

A. CONTRACTOR'S RESPONSIBILITY

The contract consists of two phases:

Phase I.....ENGINEERING & SCHEDULING

Phase II.....CONSTRUCTION, TESTS & DELIVERY

In accordance with the three phases, the Contractor assumes complete responsibility for designing, building, testing, and delivering the vessel to meet the requirements of the contract. Should the Contractor determine at any time that he is unable to fulfill those responsibilities, he shall notify the COR immediately of the problem experienced and his proposed manner of correction.

B. CONTRACT INTENT

It is intended that the Contractor will be able to bid, and perform further design development of the vessel from the Contract Design provided by the contract specifications and plans.

The specifications delineate a “Contract Design” for the vessel. The hull geometry, lightship weight and CG, arrangements have been developed and shall be incorporated into each final vessel design without change except as noted.

The plans and specifications of this contract have been prepared in accordance with the referenced design standards. The plans and specifications have not been submitted to ABS or USCG for approval. The Contractor shall prepare a Final Design for the vessel and submit the design for approval to ABS or USCG.

The Contract drawings provided reflect the ABS approved, as-built drawings for two deck cargo barges previously built and assigned ABS Certificate Nos. 9735821 and 9375823. The Contractor shall use the Contract Drawings to prepare final design incorporating the following changes:

- Delete the four deck winches
- Remove spud wells
- Remove spuds
- Incorporate bulkhead storage system
- Relocate manholes

These requested changes have been illustrated on Reference Drawing No. 665-A499-01. These changes have not been incorporated on the remainder of the Contract Drawings. The Contractor shall be required to implement these changes throughout the drawings in order to satisfy the ABS certification requirements of Contract Clause C004 and contractual submittals noted in Contract Clause H05, H12 & H13.

C. DETAILED DESIGN

During Phase I, ENGINEERING & SCHEDULING, it is the Contractor’s responsibility to complete the Detailed Design of the vessel based on the “Contract Design” developed for the vessel. The Detailed Design is the basis for construction and is always completed prior to the start of construction.

Once the Detailed Design phase has commenced, changes in hull dimensions and subdivision, for other than very minor changes in arrangement, will not be made.

The Detailed Design must be so clear in its intent that the features, characteristics, capabilities, design criteria, margins and success criteria of each component or system cannot be mistaken. The level of detail presented and documented by calculation in the Detailed Design shall be sufficient for all required regulatory approvals, and for the Government's quality assurance function.

Detailed submittals for review by Regulatory Agencies and ABS (for compliance with classification and certification requirements), inspection, testing, classification, and all associated costs are the responsibility of the Contractor.

E. DRAWINGS PROVIDED AND REQUIRED

1. Contract & Reference Drawings

The contract drawings of the "Contract Design" as listed in Section J, Clause J01, Contract Drawings. The Contract Drawings are provided with these specifications for bid purposes as well as to develop the Detailed Design.

Also provided as part of this solicitation are Reference Drawings. Reference Drawings shall be used in conjunction with the Contract Drawings and the specifications to finalize the Detailed Design of each vessel.

It is intended that the Reference Drawings provide general guidance to the Contractor in the methodology intended to develop specific systems or design features as called out in this specification. The exact details presented in the Reference Drawings may not reflect the specific needs of each vessel. The Reference Drawings provided with the specification are listed in Section J, Clause J01

C010 DEFINITIONS

The following definitions are applicable to phrases and acronyms used throughout this contract:

- K.O. - Contracting Officer - A person with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.
- COR - Contracting Officer's Representative - a member of the contract management and quality assurance team authorized by the Contracting Officer to perform certain administrative and managerial duties. A copy of the COR's authority letter is furnished to the Contractor.
- GFE - Government Furnished Equipment - Equipment, materials or components furnished by the Government to the Contractor for installation in the vessel.
- USACE - Acronym for United States Army Corps of Engineers.
- MDC - Acronym for Marine Design Center.
- QC - Quality Control - Quality Control is a function of the Contractor. Refer to clause E03. Quality Assurance (QA) is a function of the Government.

C025 CONTRACTOR QUALITY STANDARDS

The Contractor shall be responsible for the construction of a complete and functioning vessel. The Contractor shall utilize the specified components so as to meet specification requirements utilizing construction and testing methods to ensure that the complete vessel shall conform to the intended design.

Inspection by the Marine Design Center is for the purpose of verifying the proper function of the Contractor's quality control measures and is not to be used as a substitute for control of quality by the Contractor.

A. STRUCTURAL MATERIALS

Unless otherwise specified or noted on the Contract Drawings, all structural hull material shall be in accordance with the following specifications:

- American Bureau of Shipping (ABS), "Rules for Building and Classing Steel Vessels" and "Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways."
- Welding Materials - ABS "Approved Welding Electrodes, Wire-Flux and Wire Gas Combination."

B. STANDARD PARTS AND MATERIALS

All articles, fittings, equipment, supplies, and materials used in the construction and outfitting of the vessel shall be the highest grade, free from defects and imperfections, unused and, be the standard product of reputable manufacturers, to the maximum extent practicable. Any material not specified shall be the best of their kind for the purpose intended.

Materials specified herein to meet the requirements of standard specifications published by national authorities shall conform with the respective editions, including amendments, specified. No salvage materials shall be used in the work.

C. WORKMANSHIP

All labor shall be especially skilled for each kind of work and under competent direction.

In engaging one kind of work with another, marring or damage of previously acceptable construction shall be cause for rejection. All parts of the vessel intended to join or bear upon other parts shall have complete and solid contact and shall fit together without excessive cold work during erection. Shims or liners shall not be used for the purpose of overcoming a bad fit. Lightening holes may be punched or flame-cut and all edges shall have burrs removed. Holes in members having sharp curvature shall be avoided.

D. WELDERS

All welding under this contract shall be done only by welders who have successfully passed qualification tests accepted by the American Bureau of Shipping or other regulatory bodies acceptable to ABS.

The Contractor shall bear the expense of conducting these tests and shall certify, by name to the Contracting Officer, welders who have successfully passed the prescribed tests and hold current, valid certifications.

The Contractor shall require any welder to repeat these tests when in the opinion of the Contracting Officer, the work of the welder indicates a reasonable doubt of his proficiency. In such cases the welder shall be re-certified as above if he successfully passed the retest; otherwise, he shall be disqualified until he has successfully passed the retest.

The Contractor shall maintain records of each welder's certification during the course of the contract. The records are to be available for examination upon request of the Contracting Officer.

E. WELDING

All welding and welding procedures shall be in accordance with the current rules of the American Bureau of Shipping and ANSI/AWS D3.5-85. All welding equipment used on the work shall be of a modern type subject to close control. The electrodes used throughout the work shall be suitable for use with the parent metal at each weld, and be approved by ABS.

Welding procedures, as to direction, length, numbers and sequence of beads, shall be carefully planned to minimize lock-up stresses. Care shall be exercised to produce smooth even beads, especially on all exposed plating and fittings. Beads shall be ground where directed by the Contracting Officer.

The Contractor shall employ appropriate welding procedures and grounding connections to preclude the possibility of anodic erosion of the hull after launching.

F. INSTALLATION

Materials and equipment shall be installed in accordance with the approved recommendations of the manufacturer, and in compliance with the contract documents. The installation shall be accomplished by workmen skilled in this type of work.

G. PLATE FAIRNESS

Steel plating shall be installed using proper welding procedures and sequences to insure fair, undistorted plating panels. The use of filler materials to surface unfair areas is not acceptable.

Maximum allowable plating distortion is depicted in the "Guide For Shipbuilding And Repair Quality Standard For Hull Structure During Construction" from ABS. Distortion shall not exceed the amounts in this guide.

H. CONSTRUCTION STANDARDS

All material, machinery and equipment shall be new, of current manufacture and suitable for the marine service intended. Spare parts and service shall be readily obtainable.

All material, unless otherwise specified in these specifications or in the drawings, shall be of commercial quality to ASTM, ANSI, or SAE specifications.

During construction and before delivery, the Contractor shall be responsible for protection of all material, equipment, etc., intended for the vessels.

The overweight tolerance of members shall be within the limits defined by the specifications of the American Society for Testing and Materials.

All materials shall be free of imperfections due to manufacturing processes and from defects which adversely affect appearance or serviceability.

All sharp edges or projections which constitute a personnel hazard shall be removed or ground smooth. All notches shall have a radius to prevent stress concentrations.

All galvanizing shall be done after fabrication by the hot dip process, and the zinc shall be not less than 98% pure. In instances where some types of metals cannot be hot dip galvanized, zinc silicate coating may then be substituted.

C100 SCIENTIFIC**C105 HULL GEOMETRY****A. GENERAL**

The hull shape of each vessel shall be as shown on the Contract Drawings.

The lightship displacement and longitudinal center of gravity (LCG) for the “as-built” vessels referenced in Clause C004, are:

- “As-Built” Vessel Lightship Weight – 144.34 L.T.
- “As-Built” Vessel LCG – 0.03 FEET AFT OF AMIDSHIPS

Scientific calculations will be provided to the successful offeror, for their information and use. These calculations include the following:

<u>DWG NO.</u>	<u>TITLE</u>
537-D115-01,	WEIGHT ESTIMATE
537-D125-01,	HYDROSTATICS
537-D140-02,	DEADWEIGHT SURVEY REPORT
537-D150-01,	DAMAGE STABILITY ANALYSIS
537-D155-01,	TRIM & STABILITY CALCULATIONS

C185 TESTS AND TRIALS

This vessel and its component parts shall undergo testing and trials in accordance with Clause E05.

C200 ARRANGEMENTS

C201 VESSEL CONFIGURATION

A. CONTRACT DRAWINGS

537-D205-01, OUTBOARD PROFILE
537-D215-01, GENERAL ARRANGEMENTS
537-D427-01, MISCELLANEOUS DETAILS

B. GENERAL

The configuration the hull and the deck arrangement for the vessel shall be as shown on the above Contract Drawings, except as noted in Contract Clause C006.

C300 STRUCTURE**A. CONTRACT DRAWINGS**

537-D105-01, HULL LINES
537-D205-01, OUTBOARD PROFILE
537-D215-01, GENERAL ARRANGEMENTS
537-D305-01, DECK SCANTLINGS
537-D305-02, BOTTOM SCANTLINGS
537-D307-01, SIDE SHELL SCANTLINGS
537-D309-01, TRANSVERSE FRAMES
537-D311-01, RAKE STRUCTURAL DETAILS
537-D427-01, MISCELLANEOUS DETAILS

B. GENERAL

Hull construction shall be in strict and total compliance with the contract drawings listed in Section J of this contract.

Scantlings have been selected to provide the vessel with an ABS "Reinforcement B" structural classification. All weld sizes shall be as required by ABS except as shown on the contract drawings.

The contract drawings for the vessel depict the desired plate thickness and scantlings based on commercially available structural shapes.

The shell and main deck plating shall be constructed of longitudinal strakes of lengths consistent with accepted practice for hulls. All seams shall be connected with full penetration welds.

All welding shall be performed in accordance with AWS and ABS specifications and procedures.

C400 OUTFIT**C406 COATING SYSTEM****A. SURFACE PREPARATION**

Surface preparation for all structural steel shall be in accordance with Steel Structures Painting Council Standards, SSPC-SP10-85 (Near White Metal Blast) throughout. Profile after blasting shall be 1-1/2 to 2-1/2 mils in depth and jagged. All mill scale, weld spatter, dirt, oil, and grease shall be removed.

Immediately upon completion of surface preparation, all steel shall be coated with the coating system described in the following.

Contractor may limit initial coating to base coat only. In this case, or where preconstruction primer is used prior to application of subsequent coats, all steel shall be either water blasted or sand-swept clean (light blast) and any damaged areas repaired prior to application of the remainder of the system. All areas needing repair shall be cleaned to bare metal, spot blasted to restore profile, and re-coated with the base coat.

B. PAINT REQUIREMENTS

Paint shall be delivered in sealed containers with labels to indicate manufacturer, contents, and any special instructions. Paints and painting materials shall be stored under cover and protected from extreme temperatures.

Paints shall not be used if they have exceeded the closed shelf life or pot life recommended by the manufacturer. Additionally, paints shall not be applied in weather or humidity conditions not recommended by the manufacturer.

C. APPLICATION OF COATINGS

Surface preparation and paint application shall be in strict compliance with the coating manufacturer's recommendations. The Contractor shall take particular care to insure that coating system requirements are met in all areas, especially those difficult to coat, such as flange undersides. All painting on both the interior and exterior surfaces below the main deck shall be accomplished prior to launching of the vessel.

D. COATING SYSTEM

The system is composed of the following coating types:

- self priming epoxy base coat
- abrasion resistant epoxy barrier coat
- fade resistant urethane top coat

A Paint Schedule shall be developed and submitted to MDC during the Engineering Phase of the contract.

E. PRE-QUALIFIED COATINGS

Coating systems from Ameron, BLP Mobile, and International Paint have been pre-qualified for the system above. The Contractor may select any of these systems at his discretion. However, systems may not be “mixed” (i.e. mixing an “a” with a “b” is not acceptable). The specific coating designations to be used are as follows:

1. Surface Tolerant Base Coat
 - Ameron Amercoat 370
 - Amercoat 235 (formerly Devoe Bar Rust 235)
 - BLP Mobile MOPOXY-PLUS
 - International INTERTUF 262
2. Abrasion Resistant Epoxy Barrier Coat
 - Ameron Amerlock 400GF
 - Amercoat 238 (formerly Devoe Devguard 238)
 - BLP Mobile MOPOXY-PLUS FG
 - International INTERSHIELD 350
3. Fade Resistant Urethane Top Coat
 - Ameron Amercoat 450 HS
 - Amercoat 369 (formerly Devoe Devthane 369)
 - BLP Mobile MOTHANE HS-900
 - International INTERTHANE 990 HS

F. NUMBER OF COATS

The number of coats is not specified. The Contractor is required to provide the number of coats necessary to attain the DFT thicknesses required in the schedule below. Thickness applied per coat may not exceed the manufacturer’s recommended maximum thickness. Each coat shall be listed in the Paint Schedule.

G. COATING "TYPE" AND DFT SCHEDULE

All areas of the each vessel shall be coated in accordance with the following schedule:

1. Hull Exterior (below the main deck)

All steel surfaces shall be coated with base coat at 8 mils DFT minimum.

All surfaces shall be overcoated (over the base coat) with barrier coat at 12 mils DFT minimum (not including base coat).

Exterior surfaces of rudders and the interior of each sea chest shall be coated in the same manner as the hull exterior. The interior surfaces of the rudders shall not be coated.

Lettering and numerals on the hull exterior shall be overcoated (over the barrier coat) with top coat at 2 mils DFT minimum.

The base coat and the barrier coat shall both be the same color.

2. Main Deck and Top of the Towknees

All steel surfaces shall be coated with a base coat at 8 mils DFT minimum.

All surfaces shall be overcoated (over the base coat) with barrier coat at 12 mils DFT minimum (not including the base coat).

Non-skid garnet additive shall be added to the barrier coat.

Deck area shall be overcoated (over the barrier coat and non-skid garnet) with top coat at 4 mils DFT minimum.

3. Deck Fittings

All deck fittings shall receive a base coat at 5 mils DFT minimum and be overcoated (over the base coat) with a barrier coat at 5 mils DFT minimum. A top coat at 2 mils DFT minimum shall overcoat the barrier coat.

4. Hull Interior

All steel surfaces within the hull shall be coated with base coat at 8 mils DFT minimum.

H. COATING COLOR SCHEDULE

Colors shall conform to Federal Standard 595a(3) Colors Identification Numbers. Color chips (3" x 5") may be produced from the General Services Administration/Specifications Section as follows:

GSA/FSS/Specification Section
470 L'Enfant Plaza East SW, Suite 8100
Washington, DC 20407

Phone: (202) 619-8925
FAX: (202) 619-8978

The coloring schedule shall be as follows:

<u>AREA</u>	<u>COLOR/FS595 NUMBER</u>
• Hull Exterior	Black/17038
• Hull Interior	Grey/16473
• Deck Fittings	Yellow/13655
• Hull Markings	White/27880

On deck areas, both under coat (barrier coat for hull and base coat for deck other than hull) and topcoat shall be the same color.

On exterior hull areas, both the base coat and the barrier coat shall be the same color.

All top coating shall be thick enough to provide complete opaque color coverage. Thickness increased over the DFT minimums required above shall be provided if required for opaque color coverage.

I. FINAL INSPECTION OF PAINTING

The Contractor is responsible for delivering the vessel with all painted surfaces in sound condition, and in accordance with this specification.

Prior to launching of the vessel, all interior and exterior painting shall be thoroughly inspected. If there are any defects or damage in the coating of the vessel, the Contractor shall, as necessary, repair the coating to restore the integrity of the paint system, and to meet the requirements of this specification. All damage shall be cleaned to bare metal, spot blasted to restore profile, and re-coated with the entire system schedule.

The vessel shall not be launched until:

- The painting warranty and documentation as required in paragraph I above has been provided to MDC. The warranty and documentation must show compliance with this specification in all areas, and all readings taken.
- The painting has been inspected by an MDC representative. Contractor must provide warranty and documentation prior to MDC inspection.

If outfitting is required after launching, all interior and exterior painting shall be re-inspected prior to Provisional Acceptance, and any damaged areas of the coating shall be repaired by the Contractor as necessary to restore the integrity of the paint system.

Any additional painting required as a result of the Final Inspection shall be done as required to meet this specification at no additional cost to the Government.

J. DOCUMENTATION AND WARRANTY

1. Documentation

The Contractor shall provide a written signed statement from the paint manufacturer certifying that all coating application and surface preparation are in accordance with the coating system manufacturer's requirements, and that the coating application meet all requirements in this specification.

The Contractor shall provide documentation logs for each coating applied. The logs shall include the following parameters:

- a. Coating (per specification) type.
- b. Coating manufacturer's requirements for preparation, environmental conditions and application.
- c. Date and time of preparation and application.
- d. Extent and location of area coated.
- e. Surface: preparation, condition at time of coating, temperature at time of coating, dew point at time of coating.

f. DFT measurements for each applied coating type. Measurements shall be taken as follows:

- all flat surfaces, one reading per every 200 square feet, uniformly distributed.
- undersides of all flanges, one reading per every 50 linear feet of flange, uniformly distributed.
- all free standing structural members, i.e. stanchions, truss diagonals, etc., one reading per 50 linear feet of length each surface, but a minimum of two readings per surface.

Wet film measurements may be taken and converted to DFT as an alternative to direct DFT. In areas where multiple coating types are required, the above DFT requirements are applied to each coating type.

g. Services provided by paint manufacturer's representative (i.e. DFT readings, dew point, etc.), if present during application.

h. Signature of paint manufacturer's representative on site, if present.

2. Warranty

The Contractor shall warranty the coating system for one calendar year, commencing at final acceptance. The Contractor shall repair any coating failures during this time period at his cost.

K. SAFETY AND HEALTH STANDARDS

The U.S. Occupational Safety and Health Administration Regulations(OSHA) for shipyard employees engaged in surface preparation and coatings application shall be in accordance with the OSHA regulations stated in 29 CFR, subpart C.

These regulations require the Contractor to have access to a "competent person" to test compartment atmosphere quality. The "competent person" shall be in accordance with OSHA regulations, stated in 29 CFR, subpart A, 1915.7.

The regulations also require that frequent testing of the atmosphere shall be made in compartments being coated or preserved (or prepared for coating or preservation) by paints and coatings dissolved in highly volatile, toxic and flammable solvents (29 CFR, subpart C, 1915.35(b)), to ensure the atmosphere is not hazardous.

Each compartment inspection and test shall be logged on OSHA Form 74, with instructions on how to maintain a safe atmosphere in these spaces until the completion of the contract.

On 24-hours notice of any Government inspection, and before any representative of the U.S. Government boards the vessel for inspection, each enclosed or confined space to be inspected shall be labeled "Safe for Workers" in accordance with the OSHA regulations stated in 29 CFR 1915.31-36. The initial certificate shall be issued by a National Fire Protection Association (NFPA) certified Marine Chemist. A competent person may re-certify daily provided that the conditions have been maintained.

This means that in all spaces so designated:

- The oxygen content of the atmosphere is at least 19.5 percent and below 22 percent by volume;
- The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);
- Any toxic materials in the atmosphere are within permissible concentrations;
- Any residues or materials associated with any work in the space will not produce uncontrolled release of toxic materials under existing atmospheric conditions while maintained as directed.

The Contractor shall notify the Government when this certificate has been issued for each compartment and tank. The vessel will not be inspected and accepted by the Government without a NFPA Marine Chemist certificate for each compartment designated "Safe for Workers."

C410 HULL OUTFITA. CONTRACT DRAWINGS

537-D105-01, HULL LINES
537-D205-01, OUTBOARD PROFILE
537-D215-01, GENERAL ARRANGEMENTS
537-D427-01, MISCELLANEOUS DETAILS

B. TOWKNEES

Each towknee shall be located below the deck and extending from the deck level down to approximately the lightship waterline as shown on the contract drawing. Each towknee shall be faced with replaceable hard rubber pads securely bonded to steel plate similar to Morse "Pushknee" type.

Each barge shall be equipped with two towknees at each end, as shown on the contract drawings.

C. RUB STRAKES

Rub strakes shall be provided, located and installed as shown on the contract drawings. Note that rub stake ends are tapered. Rub strakes shall run straight for the length of the barges. Jogging strakes to avoid weld seams is not acceptable.

Rub strakes shall be continuous seal welded to hull plate all around. Rub strakes shall be positioned so that draft marks are not partially on rub stake.

C415 DOORS, WINDOWS, HATCHES AND MANHOLESA. CONTRACT DRAWINGS

537-D205-01, OUTBOARD PROFILE
537-D215-01, GENERAL ARRANGEMENTS

B. MANHOLES

The manholes in the main deck shall be located generally as shown on the Contract Drawings.

A total of 18 flush, mounted, watertight, 18-inch diameter, single bolt manholes, shall be furnished and installed in the barges, located as indicated on contract drawing 537-D215-01. Manholes shall be similar to NABRICO DF-430-18. All manhole covers shall be fitted with chain or cable retaining devices on the underdeck side.

C420 DECK FITTINGSA. CONTRACT DRAWINGS

537-D205-01, OUTBOARD PROFILE
537-D215-01, GENERAL ARRANGEMENTS
537-D427-01, MISCELLANEOUS DETAILS

B. DECK FITTINGS

The Contractor shall furnish and install deck fittings for the barges, types and locations as indicated on the contract drawings. All fittings are to be welded by continuous fillet welds to 1/2 inch thick doubler plates. Deck fittings shall consist of the following:

- Six 36-inch cast steel kevels chocks similar to NABRICO DF-482.
- Two 48-inch cast steel kevels chocks similar to NABRICO DF-484.
- Four 10-inch cast steel double bitts similar to NABRICO DF-40A.
- Sixteen ratchet straps similar to NABRICO DF-80.

C427 VERTICAL AND INCLINED LADDERSA. CONTRACT DRAWINGS

537-D205-01, OUTBOARD PROFILE

537-D215-01, GENERAL ARRANGEMENTS

B. VERTICAL LADDERS

A vertical ladder shall be installed at each manhole. Vertical ladders shall not be less than 16-inches wide with 2" x 3/8" flat bar side rails. Ladder rungs shall be 3/4 inch square bars, set on edge, and spaced on 12-inch centers.

C460 NAMEPLATES, NOTICES AND MARKINGSA. CONTRACT DRAWINGS

537-D205-01, OUTBOARD PROFILE

B. GENERAL

All hull markings shall be Arabic numerals, and block type letters cut from 1/4 inch steel plate, and attached to the hull with light continuous welds.

C. COLOR SCHEDULE

The color schedule for the draft marks, hull markings, name boards, and stack insignia shall be in accordance with Clause C406.

D. DRAFT MARKS

Draft marks shall be 6 inches high, located on the hull sides, forward and aft. The draft marks shall indicate each foot of draft from the 1-foot water line to the 5-foot water line and be measured from the underside of the bottom plating projected to the bottom of each numeral.

E. HULL MARKINGS

Owner markings in 10-inch high Gothic letters , consisting of the words " U.S. ARMY CORPS OF ENGINEERS " shall be located on hull sides, amidships, above the upper rubbing strip, port and starboard. Name markings in 10-inch high letters, consisting of the vessel name listed in clause C006, Vessel Identification, shall be located at the following locations:

- Headlog and sternlog on centerline
- Side shell at forward end, port and starboard
- Side shell at aft end, port and starboard

Confined space markings shall be stenciled on all entrances and shall read as follows:

**DANGER
PERMIT REQUIRED
CONFINED SPACE
DO NOT ENTER**

C499 BULKHEAD STORAGEA. REFERENCE DRAWING

667-A499-01, BULKHEAD STORAGE

B. INTENT

The contractor shall develop a final design for storing bulkheads on the deck of the barge. A conceptual design was developed and is illustrated on the above reference drawing. Note that this arrangement is not symmetric about the centerline and that the longitudinal and transverse locations shown are required to ensure proper trim of the barge in its loaded condition. After delivery of the vessel, the Government intends to store two bulkheads on the deck in a longitudinal orientation. The bulkheads are not part of this contract and are shown for information purposes to permit the contractor to complete the final design.

C. TIE DOWN MECHANISM

The contractor shall further develop the details of a tie down mechanism, that complies with Detail #-G15 of Reference drawing 667-A298-01, to secure the bulkheads to the deck of the vessel. The mechanism shall be limited to the deck connection point. The nomenclature, quantity and location of the deck connection points shall be as shown on the Reference Drawing. Additional rigging such as cables, chains, shackles have been illustrated on the drawing for information purposes; but will not be delivered as part of this contract.

D. STORAGE PAD

The contractor shall develop the details for a structural pad to store each bulkhead on. The Reference Drawings includes a conceptual detail (Detail G-12), which the contractor shall develop into a final design. The top of the storage pad will be level to account for camber in the deck and allow for upright storage of bulkheads. Under-deck stiffening will be required in way foundations.

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PART I - THE SCHEDULE - SECTION D

PACKAGING AND MARKING

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D01 PACKAGING

All spare parts, materials, and tool chests shall be packaged by the Contractor in weatherproof containers.

Parts that require preservation shall be preserved with a paint or other preservative coating acceptable to the manufacturer and the COR. All threaded parts shall be coated or filled with preservative and protected with plastic pipe caps or plugs as appropriate.

Spare parts, materials, and tool chests shall be packaged in Contractor furnished pallets or fixtures to raise them off the ground during storage, and to provide a lifting rig for moving them by crane, forklift, and truck.

D02 MARKING

All spare parts will be marked or labeled by the Contractor, with the following information:

NAME OF PART & PART NUMBER
NAME OF EQUIPMENT OF WHICH ITEM IS A PART
DRAWING REFERENCE
MANUFACTURER
YEAR OF MANUFACTURE
OTHER IDENTIFYING INFORMATION

This information shall be engraved on a plastic tag or metal plate and securely attached to each spare part with the exception of consumables.

In addition, where individual spare parts are packaged in crates or other containers, the crate or container shall be labeled with a stencil, in paint of a contrasting color, on at least three sides. The stenciled labels shall provide the same information as the part identification tag.

Where multiple spare parts are packaged in a crate or container, the requirement for stenciling the crate as stated in the previous paragraph shall apply, but, in addition, the crate shall contain an inventory card affixed to the inside cover of the container. The inventory card shall list each item in the container, including all information on the individual item tags.

PART I - THE SCHEDULE - SECTION E
INSPECTION AND ACCEPTANCE

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PART I - THE SCHEDULE - SECTION E INSPECTION AND ACCEPTANCE

E01 INSPECTION

The contract will be managed by the Marine Design Center (MDC) of the U.S. Army Corps of Engineers (USACE) and is subject to inspection by its appointed representatives to insure strict compliance with the terms of the contract. No Government Representative, except the Contracting Officer, is authorized to change any provision of the specifications, nor shall the presence or absence of a Government Representative relieve the Contractor from any requirements of the contract.

The Contractor shall provide gas-free and oxygen level certificates for all compartments prior to permitting entrance for work or inspection. This procedure shall be reflected in the Contractor's Quality Control plans.

E02 LAUNCHING

The Contractor shall be responsible for the satisfactory launching of each vessel at the time and date selected and mutually agreed upon by the Contractor and the COR.

The Contractor shall provide a written notice to the COR 7 calendar days prior to each launching. Prior to launching, all painting below the main deck (interior and exterior) must be completed. The Contractor shall schedule 3 days between hull inspection and launch to allow any new paint on the hull interior and exterior to cure properly.

E03 QUALITY CONTROL AND INSPECTION

A. GENERAL

During the proposal phase of this procurement, the Contractor submitted a Contractor Quality Control (CQC) and Inspection Program for the work required in this contract. Full compliance with this Program is the Contractor's responsibility.

Responsible authorized personnel shall inspect the work in progress and all completed work, conduct necessary tests and record the data required. An Authorized Contractor Representative shall sign the records attesting to the validity of the information. Contractor certified inspection is an integral part of all work, therefore the COR will consider the entire contract incomplete if Contractor documentation and records signed by the Contractor's Authorized Representative are not complete.

B. SUBCONTRACTORS

Work subcontracted and/or performed away from the shipyard is covered by this inspection system. The prime Contractor cannot delegate the authority to witness or perform, and sign for tests and inspections conducted away from the shipyard, without approval of the COR.

If the subcontractor has an established Quality Control program with designated organization and personnel, the prime Contractor may designate an appropriate individual in that organization as his authorized representative. Such designation shall clearly indicate that the individual is an employee of a subcontractor and his appointment shall be subject to the approval of the COR.

C. TESTING

When any workmanship, material, or apparatus fails to pass any test or inspection, it shall be fully retested only after all known faults have been eliminated. Where directed by the COR, such failed material or apparatus shall be completely removed from the work and renewed. Any defects in workmanship or material shall be remedied by the Contractor at no additional cost to the Government, except where work was performed on material furnished by the Government.

E04 FACILITIES FOR PERSONNEL

While it is not intended that the Marine Design Center will have a Resident Engineer's Office, the Contractor shall provide office space for use by a Marine Design Center staff of two.

The space shall be provided with a set of up to date detailed design and production drawings to facilitate inspection of the vessel.

The space shall be convenient to the work site and consist of a desk, chair, one commercial telephone, access to the Contractor's telephone system, and one drawing table suitable for layout of drawings for study. The commercial telephone shall have speakerphone capability. The space shall be air conditioned, heated, ventilated, well maintained and well secured, and be convenient to toilet and shower facilities. The space and facilities shall be suitable for both male and female staff.

Government Representatives attending the construction may bring with them communication equipment, cameras, and various items of test equipment. The Contractor shall permit unencumbered ingress and egress to and from the shipyard and each vessel with such equipment.

Upon request, the Government representative shall have the unrestricted use of a facsimile machine, photocopier, word-processing equipment, paper, supplies, etc.

In addition, the Contractor shall furnish two parking spaces within the shipyard, in safe locations and accessible to the assigned offices.

E05 TRIALS, TESTS AND DEMONSTRATIONS

A. GENERAL REQUIREMENTS

All trials, tests and demos shall be performed the vessel(s).

1. Levels of Testing

The Contractor shall perform tests on all equipment, machinery, and systems; individually, and integrated as a whole. The tests shall be performed as necessary to demonstrate satisfactory compliance with the Specification requirements contained in Section C, "DESCRIPTIONS/ SPECIFICATIONS/WORK STATEMENTS," of this Contract.

The Contractor shall perform five levels of testing as follows:

Level 1Pre-Trial Tests
Level 2Builder's Dock Trials
Level 3Dock Trials
Level 4Open Water Trials (Not used.)
Level 5Final Acceptance Demonstrations

All demonstrations, tests, and trials shall be performed as specified herein and as specified in Contract Section C. The Contractor shall furnish all labor, materials, tools, and test equipment as necessary and perform the testing, trials, and demonstrations specified.

2. Consumables and Operating Fluids

The Contractor shall furnish all fuel oil, hydraulic oil, lubricating oil, engine anti-freeze, treatment chemicals, degreasing agents, gases, potable water and any other consumables required to perform the tests and demonstrations.

3. Test Agenda and Test Memoranda

The Contractor shall prepare an Agenda and Test Memoranda of the required tests and trials for each vessel in accordance with the requirements set forth herein. Two copies of the Agenda and Test Memoranda shall be submitted to the COR for review and approval 60 days prior to the scheduled testing (see Clause H02).

a. Test Agenda

For each vessel, the Contractor shall prepare a Test Agenda for Level 3 and 4 Tests and Trials. The Agenda shall be a complete, detailed schedule of all tests, trials and demonstrations specified in this clause. The Test Agenda shall be arranged by day, not date, and shall list the specific tests, trials, and demonstrations, and the sequence in which these will be performed.

b. Test Memoranda

For each vessel, the Contractor shall prepare Test Memoranda for all systems and equipment tested under the Levels 1, 2, 3, 4, and 5 test and trial requirements of this clause.

The test memoranda shall describe the actual test procedures, and data to be taken. The procedures shall be in accordance with the “start-up” procedures for the equipment, as delineated in the operating manuals furnished for the equipment by the manufacturer. The Contractor shall incorporate demonstrations of all applicable controls, instruments, and alarms, into each system’s Builder’s Dock Trials, Dock Trials, Open Water Trials, and Final Acceptance Demonstrations sections of the Test Memoranda. Data recorded in time intervals shall be tabular so that data trends can be easily recognized.

Each test memorandum shall:

- (1) Reference the manufacturer’s manual(s) used to format the test procedure.
- (2) Describe instrumentation for each test.
- (3) Include a blank space for relevant nameplate data, ambient conditions, tested parameter values for each time interval, designated values for pass/fail.
- (4) Include signature blocks for Contractor Representative and Government Representative witness signatures, times, and dates.
- (5) Include a space for writing comments.

The Test Memoranda shall be typed on 8-1/2 inch by 11-inch sheets of paper, single side, in three-ring notebook, with dividers for each section. Each page shall include the Marine Design Center project number (#2350, etc.) at the top.

The memoranda shall be arranged by system and equipment, with each level of testing for a specific system or piece of equipment recorded under the respective heading.

4. Test Reports

For each vessel, the Contractor shall compile the results of all tests and trials in a Test Report in accordance with the requirements set forth herein. Four levels of test reporting are required in accordance with the following schedule.

- a. Within 2 days of the completion of any Pre-Trial test, a copy of the documentation of that test shall be available to the COR for review.
- b. A preliminary Builder's Dock Trial Test Report shall be available to the COR for examination following the successful completion of Pre-Trial Tests (Level 1) and the Builder's Dock Trials (Level 2).
- c. Following the successful completion of Dock Trials (Level 3), the Contractor shall make the Dock Trials Test Report available to the COR for review.

(1) Test Report Requirements (Levels 1, 2 and 3).

The Contractor shall make available a Test Report comprised of the results of all required Level 1, Level 2 and Level 3 tests and trials, and the results of all Vendor's tests. The Test Report shall be the filled-in version of the Test Memoranda. The test report shall be maintained current as tests and test levels progress. The test report shall be furnished in three-ring binders, with dividers for each test.

The Test Report, including the results of all Level 1 and Level 2 trials, shall be available to the COR prior to, and during, the Level 3 tests. The Test Report, including the results of all Level 1, Level 2

and Level 3 tests and trials, shall be available for review by the COR prior to and during the Level 4 trials.

The Test Report, including the results of all Level 1, Level 2, Level 3, and Level 4 tests and trials, shall be available for review by the COR prior to and during the Level 5 demonstrations.

(2) Test Report Review and Approval

The Test Report shall be reviewed and approved by both the Contractor and the COR at the conclusion of each level of testing. Review and approval of the Test Report by the Contractor and the COR is a precondition of moving to the next level of testing.

- d. Within 10 calendar days following the successful completion of Acceptance Trials (Level 5), the Contractor shall submit the Acceptance Trials Test Report to the COR for review.

(1) Test Report Requirements (Level 5)

The final version of the Test Report, including results of all five levels of the tests and trials, shall be bound in three ring binders and submitted in triplicate, within 30 calendar days following successful completion of the Level 5 demonstrations, and prior to Final Payment.

5. Deficiencies

The COR will compile a list of deficiencies which will be given to the Contractor. All deficiencies shall be corrected. Final Acceptance of each vessel will be made following remedy of all deficiencies.

The successful completion of all tests, trials, demonstrations and remedied deficiencies, shall be determined by the COR.

B. PRE-TRIAL TESTS (LEVEL 1)

All trials, tests and demos shall be performed the vessel(s).

The Pre-Trial tests are designed to ensure proper construction, and installation of all equipment, piping, and electrical systems, tanks, and exterior and interior bulkheads. For each vessel, pre-trial tests shall be performed during the course of construction and prior to the beginning of Builder's Dock Trials (Level 2).

The COR shall be notified at least 24 hours in advance of any such testing and may, at his discretion, send a Government representative to witness any or all tests. The Contractor shall coordinate with ABS to ensure that they are present for all tests required to be witnessed for class.

Documentation of all pre-test inspection shall be in accordance with the requirements of Section E03 (Quality Control and Inspection). All deficiencies, including cracks, leaks, grounds detected in new circuits, or poor workmanship shall be corrected prior to commencement of Builder's Trials (Level 2). Pre-trial tests shall include the following:

1. Hull

All enclosures in the hull shall be tested to ensure that they:

- Securable in the open and closed position.
- Fit properly at jamb or knife-edge seal.
- Open and close with a reasonably amount of force.
- Pass the hose testing for tightness, where applicable.

All tanks and watertight bulkheads shall be tested in accordance with ABS Rules.

2. Deckhouse

All enclosures in the weather shall be tested to ensure that they:

- Securable in the open and closed position.
- Fit properly at jamb or knife-edge seal.
- Open and close with a reasonably amount of force.

- Pass the hose testing for tightness.
- Are fitted with eyebrows or watersheds where applicable.

All weather tight exterior bulkheads shall be hose tested for tightness prior to coating.

3. Piping Systems

a. General

The testing requirements set forth herein include system flushing procedures which shall be performed to demonstrate system cleanliness and integrity.

b. Compressed Air

Upon completion of installation, the piping of each compressed air system shall be hydrostatically tested in accordance with the ASME code. The system shall be inspected for leaks at the welds, fittings, etc. Upon completion of the hydrostatic test, the entire system shall be blown dry with air. The Contractor shall take proper precautions to protect the engine controls, whistle, water closets, and air tool stations.

c. Piping Systems

After thorough flushing, hydrostatically test all piping systems for leaks at 1-1/2 times working pressure for a period of not less than 10 minutes per test. Each system shall be inspected for leaks at the welds, fittings, hoses, etc.

d. HVAC

Blow out with compressed air all installed ductwork. Operationally test each supply and exhaust fan, along with the ducting to ensure absence of leaks, adequate support, and acceptable vibration levels.

e. Potable Water

The Contractor shall clean, chlorinate, and flush all system tanks and piping.

f. Fixed Fire Extinguishing (CO₂) System

Installation test requirements:

Upon completion of the piping installation, and before the cylinders are connected, a pressure test of the fixed CO₂ system shall be performed IAW CFR 46 Subchapter 76.15-15 paragraph (j) subparagraph 1-4.

The piping from the cylinders to the manifold stop valves shall be subjected to a static pressure of 1000 psig for two minutes with less than a 150 psi loss per minute.

The individual branch lines to the various spaces protected shall be tested in the same manner at a static pressure of 600 psi.

In lieu of the tests prescribed above, small independent systems protecting spaces such as emergency generator room, lamp lockers, etc., may be tested by blowing out the piping with air at a pressure of at least 100 psi.

Demonstrate the proper operation of the CO₂ system. Demonstrate the operation of the audible alarms and the automatic shutdown of the ventilation system fans. (These tests may be done concurrently with the required ABS tests on this system. A Government representative must be present to witness the tests).

4. Electrical Cabling

Insulation resistance readings of all installed power and lighting cable shall be taken using a 500 volt megger, and shall be in accordance with IEEE Standard 45, Section 46. The measured cable insulation resistance must meet or exceed the minimum values outlined in the referenced IEEE publication. Also, measure the voltage drop of the longest receptacle circuit. A complete record of all readings shall be kept to assure that all circuits and equipments have been checked.

5. Exhaust Systems

Blank off and test the flanges, welds, and gaskets of each exhaust system using compressed air and soap bubbles. The main engine exhausts, and the diesel generator exhausts shall all be checked in this manner.

6. Spud Shop Test

Air test each spud to verify water tightness and load test to demonstrate structural integrity at the weldments. With the spud supported at the two ends, subject each side to a calculated test load at mid-span to stress the material to 75% of the yield point. Measure and record the midspan deflection, and ensure that no permanent deformation has occurred after the load is removed.

The design spud length overall (LOA) shall be verified and recorded.

Check the accuracy of the spud markings and the locking pin/dog locations with respect to the spud tip and the stowage position.

Check the sheave for freewheeling rotation motion.

Check the wire rope keeper clearance with the sheave rim to ensure that the rope cannot jump from the groove.

C. BUILDER'S DOCK TRIALS (LEVEL 2)

All trials, tests and demos shall be performed the vessel(s).

Builder's Dock Trials are a preliminary "run-through" of all required Dock Tests (Level 3) by the Contractor. The intent of this testing is to provide both the Contractor and the COR reasonable assurance that all equipment and systems have been thoroughly prepared and are ready for formal testing in Dock Trials (Level 3).

For each vessel, Builder's Dock Trials shall be conducted at the Contractor's facility listed in Section B of the contract. The COR shall be notified, in writing, at least 2 working days prior to the scheduled commencement date of Builder's Trials. The Test Report must be current prior to commencing Builder's Dock Trials.

The trials shall be of sufficient scope and duration to assure that all machinery and equipment is operable and all systems are complete. The trials need not be carried out to the same degree as the Level 3 testing.

D. DOCK TRIALS (LEVEL 3)

All trials, tests and demos shall be performed the vessel(s).

Dock Trials are the operability tests the Contractor must perform in the presence of the Government Representative to demonstrate the proper installation, operation, control, and performance of all equipment, machinery, and systems installed as part of this Contract. Specific dock trials and demonstrations are defined in paragraph E.

In addition, each test or demonstration shall include control, instrumentation and alarm operation as applicable.

Prior to the start of Dock Trials, all construction and installations must be complete (except for final cleaning and touch-up painting), and all Level 1 and Level 2 testing must be successfully completed and documented. The Test Report must be current through the two levels of testing and approved by the COR before Level 3 testing can proceed.

Commencement of Dock Trials shall not be sooner than one full working day after completion of Builder's Dock Trials. The COR shall be notified immediately of any condition which would delay the conduct of Dock Trials.

The COR shall be notified in writing 10 working days in advance of the date set for testing of each vessel. Results of the Level 2 Testing must be faxed to the Marine Design Center at least one day prior to the start of the Dock Trials, if Level 2 Testing was not attended by a Government Representative.

All testing and trials shall be conducted in the presence of a Government representative and any vendor representatives required by the Contract. The tests shall be conducted in accordance with the Agenda.

The Contractor shall indicate in the test memoranda which tests will be performed using the diesel generator(s) and which tests will be performed using the shore power.

During dock trials and thereafter, the atmosphere in spaces being prepared for, and preserved by, paints and tank coatings dissolved in highly volatile, toxic, and flammable solvents (29 CFR 1915.35(b)), shall be tested frequently and shall be in accordance with the U.S. Occupational Safety and health Agency Standards regulations stated in CFR 1915.31-36.

Within 24-hours of final inspection, and before any representative of the U.S. Government boards the vessel for such duties, each compartment or space to be inspected shall be certified "SAFE FOR WORKERS" by the National Fire Protection Associations (NFPA) certified Marine Chemist. This means that in the compartment or space so designated:

- The oxygen content of the atmosphere is at least 19.5 percent and below 22 percent by volume;
- The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);
- Toxic materials in the atmosphere are within permissible concentrations;
- Any residues or materials associated with any work in the space shall not produce uncontrolled release of toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's certificate.

The Contractor shall notify the Government when this certificate has been issued. A vessel will not be inspected and accepted by the Government without an NFPA Marine Chemist certificate for each hull compartment designated "SAFE FOR WORKERS."

The success of all tests and the existence of any deficiencies shall be determined by the COR. Deficiencies shall be remedied prior to start of the Open Water Trials (Level 4).

E. SPECIFIC DOCK TRIALS AND DEMONSTRATIONS (LEVEL 3)

All trials, tests and demos shall be performed the vessel(s).

1 DEADWEIGHT SURVEY

A deadweight survey of the vessel(s) shall be conducted in accordance with applicable sections of Standard Guide For Conducting Stability Test ASTM F 1321-90 to determine the as-built lightship weight and the longitudinal and transverse centers of gravity.

2 ENCLOSURE TIGHTNESS & OPERATION

The Contractor shall successfully demonstrate that all enclosures:

- Are securable in the open and closed position.
- Fit properly at jamb or knife-edge seal.
- Open and close with a reasonably amount of force.

- Are free of paint and grit on rubber seals.
- Are free of dirt and grit at seal jamb.
- Are fitted with eyebrows or watersheds where applicable.

Using a hose, demonstrate weather tightness of all windows and doors.

3 DIESEL GENERATOR SETS

For each diesel generator set, demonstrate the following in the presence of an authorized manufacturer's representative:

- Cold starting.
- Starting and stopping of each generator set from its local panel.
- Starting and stopping of each generator set from the pilothouse.
- Alarms at its local panel. Ensure the proper operation of all alarm test circuits.
- Automatic shutdown for engine overspeed.
- Operation of the generator heaters.

4 LOAD BANK TESTING

Each diesel generator set shall be load bank tested. Operate each generator set at 1/4, 1/2, 3/4 and full loads in 15 minute intervals, and then at 110% rated load (with the use of a load bank) for a minimum of 2 hours until the jacket water and exhaust temperatures stabilize. All engine and generator parameters shall be recorded at 5-minute intervals for the partial and full load periods, and at 15-minute intervals for the 110% load period.

5 ENGINE COOLING SYSTEM

Demonstrate that proper cooling water flow takes place during the operation of the diesel generators. Inspect the system for leaks.

6 ENGINE EXHAUST SYSTEM

Demonstrate the operation of each main engine and diesel generator exhaust system. Inspect each system for leaks and verify the backpressure on each system.

7 FUEL OIL SYSTEM

Ensure proper flow to the main engines and the diesel generators during operation. Demonstrate the operation of all remote operated shut-off valves.

8 BILGE SYSTEM

Demonstrate the operation of the bilge system by using the bilge pump to suction bilge water from each compartment, and then discharge the water overboard. Record the pump discharge pressure for the pump. Align the fire pump for bilge service and demonstrate the fire pump's ability to take suction from the farthest bilge suction.

9 POTABLE WATER

Demonstrate that there is adequate flow of hot and cold water from each respective fixture (sinks, shower, water closets, water cooler, and hose bibb).

Allow the flow to continue from an outlet until the potable water pump starts and note the "cut-in" pressure. Ascertain that the pump shuts off when the pressure reaches the "cut-off" pressure. Measure the chlorine level in the potable water tank using a standard test kit.

Demonstrate the operation of the liquid level gauge for the potable water tank.

Extract sufficient water effluent samples and have them tested by a qualified facility to demonstrate that the water meets the EPA regulations of Title 40, Chapter 1, Part 141 – "National Interim Primary Drinking Water Regulations."

Measure the chlorine level in each potable water tank using a standard test kit

10 SANITARY & SEWAGE SYSTEM

Flush each head several times to demonstrate the operability of the system. Demonstrate operation of the marine sanitation device and automatic sump/pump.

Demonstrate the operation of each gray water drain from the galley sink, lavatories, and showers. Demonstrate the operation of the three-way valves to direct flow to the sanitary holding tank or overboard.

Demonstrate the operation of the sanitary holding tank liquid level gauge.

11 DRAINAGE SYSTEM

For the weather deck drains, demonstrate the operation of all scupper drains to drain water from their respective decks.

12 FIREMAIN AND FIRE PUMP

Demonstrate the starting capability of the fire pump from the local station and all remote stations.

Demonstrate the operation of the indicators for the fire pump suction and discharge valves.

13 FIXED FIRE EXTINGUISHING (CO₂) SYSTEM

Installation test requirements:

- Upon completion of the piping installation, and before the cylinders are connected, a pressure test of the fixed CO₂ system shall be performed IAW CFR 46 Subchapter 76.15-15 paragraph (j) subparagraph 1-4.
- The piping from the cylinders to the manifold stop valves shall be subjected to a static pressure of 1000 psig for two minutes with less than a 150 psi loss per minute.
- The individual branch lines to the various spaces protected shall be tested in the same manner at a static pressure of 600 psi.
- In lieu of the tests prescribed above, small independent systems protecting spaces such as emergency generator room, lamp lockers, etc., may be tested by blowing out the piping with air at a pressure of at least 100 psi.

Demonstrate the proper operation of the CO₂ system. Demonstrate the operation of the audible alarms and the automatic shutdown of the ventilation system fans. (These tests may be done concurrently with the required ABS tests on this system. A Government representative must be present to witness the tests).

14 FIRE DETECTION & ALARM SYSTEM

Demonstrate the operation of the fire detection system. The testing and trials shall demonstrate:

- The activation of the alarms from each smoke detector and heat sensor.
- The automatic shutdown of the HVAC System and any ventilation fans serving the main deckhouse.
- The operation of the red indicating light on the pilothouse top.
- Operation of the system battery charger.

A representative of the alarm system shall be present during the tests and trials of the detection and alarm system.

15 HVAC

A HEAT PUMP - HEATING AND COOLING

Demonstrate the satisfactory operation of each heat pump to cool, heat, and admit outside ventilation air to its respective zone. Measure and record the temperatures at each air register during the heating and cooling modes. Measure and record the cfm at each register. Demonstrate the operation of the temperature controls and fan control for each zone. Ensure that the smoke sensors/heat sensors activate the system's controls to shut down the system in case of fire.

Demonstrate the operation of each electric resistance heater located in each supply duct leading from each heat pump. Demonstrate the operation of each manually adjustable damper at each duct outlet.

A representative of the air conditioning and heating system supplier shall be present during the tests and trials of the system.

B SPACE VENTILATION

Demonstrate the satisfactory operation of the supply and exhaust fans for the lower and upper engine rooms.

Record the air velocities at each fan and duct discharge, and calculate the cfm.

Demonstrate the operation of the galley/mess vent hood and each head compartment ventilation fan. Measure and record the cfm for each fan.

Demonstrate the operation of the supply fans for the galley/mess area and the crew quarters.

Demonstrate the operation of the exhaust fan for the workshop.

C SPACE HEATING

Demonstrate the operation of the electric resistance heaters in the:

- Lower and upper engine rooms
- Tank space
- Head spaces
- Workshop

16 COMPRESSED AIR SYSTEM

Demonstrate the charging of the air receiver from atmospheric to the system design pressure. Record the amount of time to charge the receiver.

Demonstrate the lead-lag ability of each compressor. Demonstrate that the lag compressor will cut-in at 20 psig lower than the lead compressor. Demonstrate that both compressors will cutout at 175 psig.

Demonstrate airflow to all air tool stations and the water closets.

Demonstrate the operation of the air horn.

Verify correct operation of the desiccant air dryer.

Demonstrate the operability of all relief valves and receiver drain valves.

Using the compressed air system, demonstrate the blowdown of the sea chests.

17 ALARM SYSTEMS

Demonstrate the operation of each alarm system:

- General Alarm System
- Bilge Alarm System

Each station of an alarm system shall be tested for operation showing the activation and silencing of the visual and audible alarms of the system.

Demonstrate the operation of the pilothouse top indicating lights for the Bilge Alarm System.

Demonstrate the operation of the battery charger for the General Alarm System.

18 WINCHES & CAPSTANS

Operate the deck winches in both directions under power. Demonstrate the operation of the selector switch and operation from the deck stations and the pilothouse stations.

Operate the capstan(s) in both directions under power. Demonstrate the operation of the switch.

Demonstrate the operation of the spud handling system by performing the following operations from both the local and remote control panels:

- Power-down and power-up operation at the rated speed.
- Stopping, braking and holding.
- Free fall operation. Lower the spud to within 6-feet of river bottom. Using the emergency free fall feature of the spud control system, free-fall the spud to set the tip into the river bottom. Verify that the control friction clutch arrests the motion of the drum with minimum without backlash of the drum wire. Engage the drum clutch and withdraw the spud from the river bottom by power-up operation.
- Raise the spud to the stowage position and secure with the locking pin engaged.

19 ROLLER BUTTONS

Demonstrate the operation of the roller buttons.

20 MISCELLANEOUS EQUIPMENT

Demonstrate the operation of the galley/mess equipment, as applicable:

- Refrigerators/freezers
- Electric range (oven and stove top)
- Griddle
- Ice maker
- Coffee maker
- Microwaves

22 AC ELECTRICAL SYSTEM

A General - In order to demonstrate the operation of the electrical system as integrated system, the Contractor shall perform approximately ½ of the Level 3 machinery tests using the diesel generators. The remaining ½ of the Level 3 machinery tests shall performed using shore power supplied through the vessel's shore power receptacle. It is the Contractor's option as to which tests shall be powered from shore power and which tests shall be powered by the diesel generators.

B Switchgear - Demonstrate the operation of all circuit breakers and all equipment in the main switchboard. For the two generator breakers, the shore power breaker, and the off-vessel breaker, safely demonstrate all mechanical and electrical interlocks.

C Switchboard - Demonstrate all features of the switchboard such as the voltmeters and selector switches, ammeters and selector switches, frequency meters and selector switches, power available indicator lights, space heaters, ground detection lights and test switches, and ground ammeter and test switch. Demonstrate the operation of the phase sequence/loss system.

D Distribution Panels - Demonstrate the operation of all circuit breakers in the distribution panel boards.

23 DC ELECTRICAL SYSTEM

A General - Verify the operation of the batteries and battery chargers before and after starting the diesel generators.

B Distribution Panel - Demonstrate the operation of all circuit breakers in the DC panels.

C Demonstrate the operation of the battery selector switches. Verify the proper operation of the 24/12-volt DC converters.

24 LIGHTING

A Lighting - Demonstrate the operation of all interior lights, exterior lights, and floodlights. Demonstrate the operation of all lighting switches.

B Emergency Lighting - Demonstrate the operation of all emergency lights, including the manual override switch to turn the emergency lights on or off.

C Console Control Lighting - Demonstrate the operation of all the lights for all gauges and instrumentation installed in the pilothouse console. Demonstrate the operation of the dimmer switches for the lights.

D Navigation Lights - Demonstrate the operation of all navigation lights. Demonstrate the operation of all circuit breakers and "bulb-out" alarms in the navigation lighting panel.

E Searchlights - Demonstrate the operation of the Xenon searchlights. Demonstrate the operation of the flanking lights. Demonstrate all searchlight controls.

25 RECEPTACLES

A Convenience Receptacles - Demonstrate the operability of all convenience receptacles by using 80% load for each receptacle. Check the receptacles for polarity. For GFCI types, demonstrate their ability to reset.

B Shore Power Receptacle - Demonstrate the operation of the shore power receptacle to supply power to the vessel.

C Off-Vessel Receptacle - Demonstrate the operation of the off-vessel receptacle to supply power overboard by using a load bank.

26 NOISE SURVEY

The survey will entail the taking of sufficient noise measurements in each of the vessel spaces to determine noise levels. A report shall be prepared containing the survey results.

The Contractor shall perform the survey using a subcontractor especially qualified for this work either by training or experience. The Contractor shall identify the proposed subcontractor in the Subcontracting Plan and include the subcontractor's qualifications.

The survey shall be conducted for each of the following conditions with all ventilation equipment and systems in full operation:

- Both main propulsion engines at full speed, and one generator operating at normal bus load.
- Both main propulsion engines off, and one generator running.

The sound levels reported for each compartment shall be based on the average of the broadband A-weighted sound pressure levels taken at various representative locations of the reverberant field of the compartment or space in question. These measurements shall typically be taken at locations within a space where operating personnel are expected to spend a majority of their time. Measurements shall be taken in accordance with NVIC 12-82.

A report shall be prepared by the Contractor detailing the test results. The report shall include:

- A tabulation of the actual raw data taken during the survey for noise.
- Sketches of the spaces measured with the recorded sound levels denoted at the location of their measurement. Reduced size general arrangement drawings will be acceptable for this purpose.

The Contractor shall take corrective action as necessary to achieve the required criteria. The report shall describe any compartments which present a noise hazard according to OSHA regulation, 29 CFR 1910.95 "Occupational Noise Exposure."

27 SPUDWELLS

The contractor shall demonstrate the operation of one randomly selected spud well by performing the following operations:

- Remove the aft pin on each gate to verify that pin can be remove with a reasonable amount of force.
- Swing the gate to verify that the gate swings freely.
- Install the aft pin on each gate to verify that the pin can be installed with a reasonable amount of force.

If an unreasonable amount of force is required, the deficiency shall be corrected and all spud wells shall be tested.

The spud caps/lifting collars shall be hoisted to the spud stop to ensure that there is no interference with the spud and raised spud marks.

The accuracy of the spud marks and the zero mark stowage position shall be checked and verified.

G. FINAL ACCEPTANCE DEMONSTRATIONS (LEVEL 5)

Final Acceptance Demonstrations are tests the Contractor must perform following delivery at the destination of each vessel to demonstrate to the operating staff the proper operation, and performance of all the equipment, machinery, and electrical systems functioning as an “integrated whole” as described herein.

Final Acceptance Demonstrations shall be conducted following successful completion of Level 3 tests, correction of all deficiencies and delivery of the vessel to the designated delivery point. Final Acceptance Demonstrations must be performed in the presence of a Representative of the Contracting Officer.

The contractor shall provide sufficient personnel and resources to operate all of the equipment and demonstrate its proper installation.

H. DOCUMENTATION

The Contractor shall prepare a Schedule for all levels of testing. The Schedule shall be a complete, detailed listing of all the tests, trials and demonstrations required by this contract. The Schedule shall be arranged by day, not date, and shall list the specific tests, trials and demonstrations and the sequence in which they will be performed.

The Contractor shall prepare Test Data Sheets for all equipment and systems required to be tested or demonstrated under this contract, for each vessel. The Data Sheets shall contain the information required by Clause E03, “Quality Assurance and Control” as well as the procedures of each test, the results of each tested function, nameplate data of equipment tested, and the designated areas for “Pass/fail,” witness’ signatures, dates and comments.

The Contractor shall incorporate demonstrations of all applicable controls, instruments, and alarms, into each system’s Builder’s Trials, Dock and River Tests, and Final Acceptance Demonstrations sections of the Test Data Sheets. Data recorded in time intervals shall be tabular so that data trends can be easily recognized.

The Test Data Sheets shall be typed, single sided, on 8-1/2 inch x 11 inch sheets of paper.

The Contractor shall provide a Test Report, for each vessel, comprised of the results of all required tests, trials and demonstrations performed, and all deficiencies noted. The Test Report shall be the filled in version of the Test Data Sheets and shall be available to the COR at all times throughout the construction of each vessel.

The Data Sheets shall be organized into a comprehensive Test Report and arranged by system and level of testing similar to the following outline:

- X. System (or equipment)
 - a. Pre-Trial Tests
 - b. Builder's Trials
 - c. Dock and River Tests
 - d. Final Acceptance Demonstrations

The Test Report shall be reviewed and approved by both the Contractor and the COR at the conclusion of each level of testing. Review and approval of the Test Report by the Contractor and the COR is a precondition of moving to the next level of testing.

The final version of the Test Report, including the reports of the Regulatory Bodies and the Regulatory Body Certificates, shall be bound in a durable hard cover and submitted to the COR in duplicate prior to Final Payment.

E06 FINAL INSPECTION

When all work and testing has been satisfactorily completed at the builders yard, the Contractor and a Government Representative shall make a complete physical inspection and inventory of each vessel. A "punch list" of deficiencies will be developed and presented to the Contractor for corrective action.

All corrective action necessary to eliminate the "punch list" deficiencies shall be completed at the Contractor's facility. The Contractor shall give the COR 7 working days notice prior to the desired date of reinspection.

Prior to any inspection or reinspection the vessel and all their equipment shall be thoroughly cleaned and all painting and finishes put in first class condition.

E07 PROVISIONAL ACCEPTANCE

Following satisfactory completion of all tests and trials, correction of all "punch list" deficiencies, and receipt of all contract deliverables, each vessel will be Provisionally Accepted at the builder's yard. Delivery of each vessel may not be started until Provisional Acceptance of the vessel has been made.

E08 FINAL ACCEPTANCE

Final Acceptance will be made upon delivery of each vessel, afloat and “Ready for Service” at the delivery point designated and following successful completion of the Final Acceptance Demonstrations. “Ready for Service” is defined as clean inside and out; all trash, dunnage, lashing, and delivery related material disposed of; loose items of outfit in place; all electrical and mechanical systems operational; equipment properly adjusted; instruments and electronics calibrated or aligned, fuel and water tanks filled and damaged paint touched up.

Each vessel will be subject to a complete inspection at the time of delivery.

The Contractor shall provide necessary personnel, equipment and materials to make the vessel “Ready for Service.”

E09 COMMERCIAL WARRANTY OF SUPPLIES

For the vessel, the Contractor shall assign, in writing, all commercial warranties for equipment provided under this contract to the Government. The effective date of all commercial warranties shall be the date of Final Acceptance for that vessel.

E10 RESPONSIBILITY FOR SUPPLIES

The following, clause 52.246-16, "Responsibility for Supplies" (Apr 1984), is incorporated by full test.

52.246-16 RESPONSIBILITY FOR SUPPLIES (APR 1984)

(a) Title to supplies furnished under this contract shall pass to the Government upon formal acceptance, regardless of when or where the Government takes physical possession, unless the contract specifically provides for earlier passage of title.

(b) Unless the contract specifically provides otherwise, risk of loss of or damage to supplies shall remain with the Contractor until, and shall pass to the Government upon--

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Acceptance by the Government or delivery of the supplies to the Government at the destination specified in the contract, whichever is later, if transportation is f.o.b. destination.

(c) Paragraph (b) of this section shall not apply to supplies that so fail to conform to contract requirements as to give a right of rejection. The risk of loss of or damage to such nonconforming supplies remains with the Contractor until cure or acceptance. After cure or acceptance, paragraph (b) of this section shall apply.

(d) Under paragraph (b) of this section, the Contractor shall not be liable for loss of or damage to supplies caused by the negligence of officers, agents, or employees of the Government acting within the scope of their employment.

(End of clause)

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PART I - THE SCHEDULE - SECTION F**DELIVERY OR PERFORMANCE****INDEX**

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F05 F.O.B. DESTINATION	5

F01 PERFORMANCE**TIME OF DELIVERY**

- (a) The Government requires delivery to be made according to the following schedule:

REQUIRED DELIVERY SCHEDULE

ITEM NUMBER	DESCRIPTION	QUANTITY	WITHIN DAYS AFTER DATE OF NOTICE TO PROCEED
0001A	ENGINEERING AND SCHEDULING	1 job	180 calendar days
0001B	CONSTRUCT, TEST AND DELIVER	1 job	365 calendar days
0002A	ENGINEERING AND SCHEDULING	1 job	180 calendar days
0002B	CONSTRUCT, TEST AND DELIVER	1 job	365 calendar days

The Government will evaluate equally, as regards time of delivery, offers that propose delivery of each quantity within the applicable delivery period specified above. Offers that propose delivery that will not clearly fall within the applicable required delivery period specified above, will be considered nonresponsive and rejected. The Government reserves the right to award under either the required delivery schedule or a proposed delivery schedule, if it is an earlier delivery schedule than required above. If the offeror proposes no other delivery schedule, the required delivery schedule above will apply.

OFFEROR'S PROPOSED DELIVERY SCHEDULE

ITEM NUMBER	DESCRIPTION	QUANTITY	WITHIN DAYS AFTER DATE OF NOTICE TO PROCEED
0001A	ENGINEERING AND SCHEDULING	1 job	
0001B	CONSTRUCT, TEST AND DELIVER	1 job	
0002A	ENGINEERING AND SCHEDULING	1 job	
0002B	CONSTRUCT, TEST AND DELIVER	1 job	

(b) Attention is directed to the Contract Award provision of the solicitation that provides that a written award or acceptance of offer mailed, or otherwise furnished to the successful offeror, results in a binding contract. The Government will mail or otherwise furnish to the offeror an award or notice of award not later than the day award is dated. Therefore, the offeror should compute the time available for performance beginning with the actual date of Notice To Proceed rather than the date the written notice is received from the Contracting Officer through the ordinary mails. However, the Government will evaluate an offer that proposes delivery based on the Contractor's date of receipt of the contract or notice of award by adding five days for delivery of the award through the ordinary mails. If, as so computed, the offered delivery date is later than the required delivery date, the offer will be considered nonresponsive and rejected.

For the purposes of estimating the phase completion and contract completion dates, the Contractor should take into account the time required to review the Contractor's submittals and the time between phases required to issue a Notice To Proceed. Refer to Clause H01 for additional explanation.

F02 PLACE OF DELIVERY

The Contractor shall deliver the vessels (CLIN 0001 & CLIN 0002) afloat and ready for service at the following location:

U.S. Army Engineer District, ROCK ISLAND
 Illinois Waterway Project Office
 Illinois River, Mile 160
 Peoria, Illinois

F03 NOT USED**F04 LIQUIDATED DAMAGES**

If the Contractor fails to deliver the supplies or perform the services within the time specified in this Contract or any extension, the Contractor shall, in place of actual damages, pay to the Government as fixed, agreed and liquidated damages, for each calendar day of delay the sum of:

For Line Item 0001A:	\$510.00
For Line Item 0001B:	\$ 1,050.00
For Line Item 0002A:	\$ 510.00
For Line Item 0002B:	\$ 1,050.00

Alternatively, if delivery or performance is so delayed, the Government may terminate this Contract in whole or in part under the Termination for Default - Fixed Price, Supply and Services clause in this Contract and in that event, the Contractor shall be liable for fixed, agreed, and liquidated damages accruing until the time the Government may reasonably obtain delivery or performance of similar supplies or services. The liquidated damages shall be in addition to excess costs under the Termination clause.

The Contractor shall not be charged with liquidated damages when the delay in delivery or performance arises out of causes beyond the control and without the fault or negligence of the Contractor as defined in the Termination for Default - Fixed Price, Supply and Services clause of this contract.

(End of clause FAR 52.211-11)

F05 F.O.B. DESTINATION

52.247-34 F.O.B. DESTINATION (NOV 1991)

(a) The term "f.o.b. destination," as used in this clause, means--

(1) Free of expense to the Government, on board the carrier's conveyance, at a specified delivery point where the consignee's facility (plant, warehouse, store, lot, or other location to which shipment can be made) is located; and

(2) Supplies shall be delivered to the destination consignee's wharf (if destination is a port city and supplies are for export), warehouse unloading platform, or receiving dock, at the expense of the Contractor. The Government shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved before the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the Government acting in its contractual capacity. If rail carrier is used, supplies shall be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggyback") is used, supplies shall be delivered to truck tailgate at the unloading platform of the consignee, except when the supplies delivered meet the requirements of Item 568 of the National Motor Freight Classification for "heavy or bulky freight." When supplies meeting the requirements of the referenced Item 568 are delivered, unloading (including movement to the tailgate) shall be performed by the consignee, with assistance from the truck driver, if requested. If the contractor uses rail carrier or freight forwarded for less than carload shipments, the contractor shall ensure that the carrier will furnish tailgate delivery, when required, if transfer to truck is required to complete delivery to consignee.

(b) The Contractor shall--

(1)(i) Pack and mark the shipment to comply with contract specifications; or

(ii) In the absence of specifications, prepare the shipment in conformance with carrier requirements;

(2) Prepare and distribute commercial bills of lading;

(3) Deliver the shipment in good order and condition to the point of delivery specified in the contract;

(4) Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by the consignee at the delivery point specified in the contract;

(5) Furnish a delivery schedule and designate the mode of delivering carrier; and

(6) Pay and bear all charges to the specified point of delivery.

(End of clause)

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SECTION G
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PART I - THE SCHEDULE - SECTION G
CONTRACT ADMINISTRATION DATA

G01 ACCOUNTING AND APPROPRIATION DATA

WORK ORDER ITEMS:

- CONTRACT LINE ITEM NUMBER 0001 – 002JLV
- CONTRACT LINE ITEM NUMBER 0002 – 9DF2F8

G02 CONTRACT MANAGEMENT

Marine Design Center
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Room 630 South
Philadelphia, Pennsylvania 19107-3391

G03 PAYMENT OFFICE

U.S. Army Corps of Engineers Finance Center
5720 Integrity Drive
Millington, TN 38054-5005

G04 CONTRACT ADMINISTRATION

Commander and District Engineer
U.S. Army Corps of Engineers District, Philadelphia
ATTN: CENAP-CT-C
Wanamaker Building
100 Penn Square East
Room 643
Philadelphia, Pennsylvania 19107-3390

G05 POSTAWARD CONFERENCE

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

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**PART I - THE SCHEDULE - SECTION H
SPECIAL CONTRACT REQUIREMENTS**

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PART I - THE SCHEDULE - SECTION H SPECIAL CONTRACT REQUIREMENTS

H01 CONTRACT ORGANIZATION

a. ENGINEERING AND SCHEDULING

Engineering and Scheduling is line items 0001A and 0002A of the contract and commences only after receipt by the Contractor of a Notice To Proceed with contract Line Item 0001A and 0002B, "ENGINEERING & SCHEDULING," respectively. In this first phase of the contract, the Contractor is required to complete the design, perform other production engineering, and develop the contract schedule. The Contractor is not authorized to begin physical construction until this phase of the project is completed, and the engineering and scheduling documents are approved by the COR, at which time an additional Notice To Proceed will be issued.

b. CONSTRUCT, TEST AND DELIVER

Construct, Test, and Deliver is line items 0001B and 0002B of the contract and will commence only after completion of the Engineering and Scheduling phase and receipt by the Contractor of Notice To Proceed with Line Item 0001B and 0002B respectively. During this second phase of the contract, necessary records and scheduling documents shall be completed, the vessel constructed, tests and trials performed and physical delivery shall be made. This phase of the contract is completed with receipt by the Contractor of a letter of FINAL ACCEPTANCE and submittal of all final documents.

d. PHASE SEQUENCING

It is intended that the two phases for each vessel will be performed sequentially.

The time allotted for each phase spans an interactive process involving both the Contractor and the Government. This process includes preparation, review and approval of the phase submittals, contract administration, mailing, preparation and issuance of Notices To Proceed.

In order for the Contractor to plan the work and for the Government to properly apply Liquidated Damages and Termination Clauses, a graphic identifying the sequence milestones and the performance period allotted to each milestone has been developed and is shown on a following page.

The graphic shows the two basic contract phases. Each contract phase is further subdivided into the milestones that must be completed within each phase and the amount of time allowed to accomplish each. Note that the total time allowed for each phase of the contract matches the "REQUIRED DELIVERY SCHEDULE" in Clause F01. The graphic will be updated to reflect the successful offeror's proposed schedule if it is shorter than the required schedule.

The milestones and periods of performance identified in the graphic are contract requirements.

The Contractor must be aware that the quality, completeness and detail of the submittals have a direct bearing on the approval process. Extended review iterations will extend the time necessary to receive approval of the submittals and will subject the contractor to assessment of Liquidated Damages or Termination for Default.

Refer to Clause H05 for information concerning the submittal review process.

CLIN 0001

30 CD

Receipt by Contractor of NTP Phase I (Engineering & Scheduling)

Phase I 180 Calendar Days	120 Calendar Days	Receipt @ MDC of initial submittal of all Phase I deliverables
	30 CD	Receipt by contractor of submittal review
	30 CD	Receipt @ MDC of final revised Phase I deliverables (if necessary)

30 CD

Receipt by Contractor of NTP Phase II (Construct, Test & Deliver)

Phase II 365 CD	365 Calendar Days	Construct, Test and Deliver Final Acceptance
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CLIN 0002**Table 2**

30 CD		Receipt by Contractor of NTP Phase I (Engineering & Scheduling)	
Phase I 180 Calendar Days	120 Calendar Days	Receipt @ MDC of initial submittal of all Phase I deliverables	
	30 CD	Receipt by contractor of submittal review	
	30 CD	Receipt @ MDC of final revised Phase I deliverables (if necessary)	
30 CD		Receipt by Contractor of NTP Phase II (Construct, Test & Deliver)	
Phase II 365 CD	365 Calendar Days	Construct, Test and Deliver	
		Final Acceptance	

H02 CONTRACTOR SUBMITTALS

A. ENGINEERING & SCHEDULING PHASE SUBMITTALS

The following is a summary of items that the Contractor must submit after a Notice To Proceed with each “ENGINEERING & SCHEDULING” phase of the contract is issued. All items must be received, reviewed, and approved by the COR before a Notice To Proceed with the “CONSTRUCT, TEST & DELIVER” phase of the contract will be issued. The following items are required:

<u>SUBMITTAL ITEM</u>	<u>CONTRACT CLAUSE REFERENCE</u>
CONTRACT LINE ITEM NUMBER 0001	
• Weight Estimate.....	C115
• Damaged Stability Analysis.....	C150
• Intact Stability Analysis.....	C155
• Quality Control & Inspection Plan for Phase II.....	E03
• Authorized Contractor Representative List	E03
• Test Memoranda & Agenda.....	E05
• Construction Plan.....	H06
• Contractor Safety Plan	H07
• Procurement Plan	H08
• Subcontracting Plan	H09
• Engineering Qualifications	H09
• Material & Equipment Schedule.....	H10
• Submittal Schedule	H11
• Drawing Index	H12
• Engineering & Drawings	H13
• Quality Control & Inspection Plan for Phase II.....	E03
• ABS Reviewed and Stamped Drawings and Documents	C004 & H13

SUBMITTAL ITEMCONTRACT CLAUSE REFERENCE

CONTRACT LINE ITEM NUMBER 0002

• Weight Estimate.....	C115
• Damaged Stability Analysis.....	C150
• Intact Stability Analysis.....	C155
• Quality Control & Inspection Plan for Phase II.....	E03
• Authorized Contractor Representative List	E03
• Test Memoranda & Agenda.....	E05
• Potable Water Lab Report.....	E05
• Construction Plan.....	H06
• Contractor Safety Plan	H07
• Procurement Plan	H08
• Subcontracting Plan	H09
• Engineering Qualifications	H09
• Material & Equipment Schedule.....	H10
• Submittal Schedule	H11
• Drawing Index	H12
• Engineering & Drawings	H13
• Quality Control & Inspection Plan for Phase II.....	E03
• ABS Reviewed and Stamped Drawings and Documents	C004 & H13

B. CONSTRUCT, TEST, & DELIVER PHASE SUBMITTALS

The following is a summary of items that the Contractor must submit after a Notice To Proceed with each “CONSTRUCT, TEST, and DELIVER” phase of the contract is issued. All items must be received, reviewed and approved by the COR before Final Payment will be made. The following items are required:

SUBMITTAL ITEMCONTRACT CLAUSE REFERENCE

CONTRACT LINE ITEM NUMBER 0001

- ABS Certificate..... C004
- Certificate of Wire Rope Minimum Breaking Strength..... C580
- Test Schedule..... E05
- Test Report..... E05
- Noise Survey..... E05
- Commercial Warranties E09
- Purchase Orders\Specifications H10
- As-Built Drawings H14
- Manufacturer’s or Subcontractor’s Drawings and Manuals H16
- Operator’s Manual H17
- Record Photographs H18

CONTRACT LINE ITEM NUMBER 0002

- ABS Certificate..... C004
- Certificate of Wire Rope Minimum Breaking Strength..... C580
- Test Schedule..... E05
- Test Report..... E05
- Commercial Warranties E09
- Purchase Orders\Specifications H10
- As-Built Drawings H14
- Manufacturer’s or Subcontractor’s Drawings and Manuals H16
- Record Photographs H18

H03 DESIGN REQUIREMENTS

The Contractor shall provide the necessary engineering to develop the Final Design of each vessel.

The scantlings and main structure for the hull, deckhouse and foundations shall be defined. Structural drawings shall delineate all structural members, brackets, plating and plate seams, all welding and all joint details complete with all dimensions noted. "Typical" views may be used for numerous repetitions of identical or mirror images. Every effort shall be made to make the design consistent from sheet to sheet and drawing to drawing. Calculations showing that all plate, bulkheads, stiffeners, girders, stanchions and diagonals meet the minimum requirements of ABS and any specific requirements of SECTION C of this solicitation shall be submitted with the structural drawings. The calculations shall be clearly annotated as to specific requirement being addressed and explanation of all assumptions.

A detailed Weight Estimate shall be generated using the MDC Work Breakdown Structure (WBS) system organization. The Weight Estimate shall break down the weights sufficiently so as to allow easy review of all values with reference to the drawings they represent, their quantity and location. Weights shall not be lumped into single values by deck level or longitudinal segment. An example of an acceptable weight estimate reflecting level of detail shall be provided to the successful bidder. A detailed Intact and Damage Stability analysis shall be performed for each vessel. Each report shall be prepared in accordance with the requirements noted in the appropriate clauses of SECTION C (Clause C115, C150, and C155).

For the mechanical systems, all pumps, compressors, heat exchangers, hydraulic components and machinery, deck machinery and ancillary equipment shall be sized and selected. The mechanical system drawings shall show all valves, filters, controls, receivers, pumps, strainers, sea chests, consumers, takedown connections, separators and other principal features or devices to scale. The drawings shall consist of a system schematic on the first sheet, a detailed system drawing superimposed on a vessel arrangement with a Material List and a Equipment List and necessary sections and elevations on the second and subsequent sheets. On detailed drawings, pipe 1" diameter and smaller may be shown as single lines, while larger pipe shall be shown as double lines depicting the actual scaled size. Pipe shall be located and dimensioned in the vertical and horizontal plane. Sections and elevations are required only to ensure that piping, ducting and cabling are routed through congested areas without interference. Calculations sizing the equipment shall be submitted with the system drawing. These calculations shall include the sizing of piping systems and pumps. Catalog cut-sheets of all equipment shall be submitted with the drawing.

Major equipment on all drawings (engines, motors, pumps, strainers, etc.) shall be shown in actual outline form (not schematic or by block). System routings shall be sufficiently detailed to identify the intended routing with respect to vessel structure, elevation, major vessel

equipment and major components of other systems, but without dimensions.

HVAC systems shall be defined and will include the calculations of fan and blower sizes and powers, heating and air conditioning equipment sizing and duct sizing. The HVAC system drawings shall consist of a system schematic on the first sheet, a detailed system drawing superimposed on a vessel arrangement with a Material List and a Equipment List and necessary sections and elevations on the second and subsequent sheets. Ducting shall be located and dimensioned in the vertical and horizontal planes. Sections and elevations are required only to ensure that piping, ducting and cabling are routed through congested areas without interference. An HVAC load analysis will be completed. These calculations shall be submitted with the system drawings.

The electrical system shall be defined with consumers identified and quantified, controls and switchgear identified, a complete load analysis, short circuit analysis and one line diagram prepared and generator sets selected. Cabling and lighting drawings shall be prepared using the general arrangements for background. Catalog cut-sheets of the gensets and primary power equipment shall be submitted with the system drawings.

Joiner details and material selection shall be worked out with schedules for sheathing, insulation, doors, windows, furniture, fixtures, etc. Catalog cut-sheets shall be submitted with the system drawings.

Any drawing submitted without the required catalog cut sheets and calculations, as stated herein or in the appropriate clause of SECTION C, will not be considered a formal submittal and will not be reviewed.

During the development of the Final Design, the Contractor may discover circumstances that dictate a need to change some of the equipment or materials specifically required by the Contract. Examples of this situation might be that the item is no longer available, or the lead time is too great to meet the vessel delivery. Such circumstances shall be immediately identified to the COR by letter for resolution, along with a proposed solution. Adjustments to the Contract required as a result of such circumstances, will be made under the "CHANGES" Clause.

The Contractor shall prepare Final Design drawings for regulatory submittals, COR submittal, "As-Built" drawings, and other technical details necessary to support his administration, operation, and production practices. Refer to "ENGINEERING AND DRAWINGS" Clause for a minimum list of required drawings and drafting standards.

H04 NOT USED

H05 REVIEW OF CONTRACTOR SUBMITTALS

The Marine Design Center (MDC) will review the drawings, data and other material submitted by the Contractor in the various contract phases for each vessel.

Submittals from the Contractor must be clear as to what the submittal represents and the action the Contractor requests the Government perform.

The Government's review is intended to be limited to the functional aspects of the submittals with limited technical review of general cursory nature only.

The Contractor shall comply with the requirements of the design embodied in the contract. Where review, approval, classification or certification by ABS, USCG, USPHS or other regulatory agency is a provision of the contract, Government review of Contractor submittals may not address the requirements of those agencies. It is implicit that Government acceptance of submittals will be contingent upon satisfactory fulfillment of those requirements.

Submittals found to be completely acceptable to the Contracting Officer's Representative without comment will be marked "ACCEPTED."

Submittals found to be generally acceptable to the Contracting Officer's Representative with qualifying comments will be marked "ACCEPTED WITH COMMENTS" but may or may not require resubmission depending on the COR's assessment of the criticality of the comments.

"ACCEPTED WITH COMMENTS" submittals being resubmitted will be reviewed only to ensure that the previous comments have been adequately incorporated. Resubmission requirements will be clearly marked on the return.

Submittals unacceptable to the Contracting Officer's Representative will be marked "NOT ACCEPTED." Submittals not accepted will always require full and complete resubmittal. Such resubmittal will result in a full and complete review as though it was a first submittal.

Submittals furnished for information only or for which the Contractor has not indicated the required review action will be marked "EXAMINED."

The Contractor shall insure that all review comments are incorporated in corrected submittal documents or are rebutted in separate correspondence. The Contractor is encouraged to completely discuss all submittal comments with the MDC author in order to insure complete and effective communication.

The Contractor will not use the drawing review or submittal process for contract deviations. Changes in equipment, materials, construction techniques or details must be the subject of separate, specific correspondence. Any such request made by the Contractor must be specific and clear as to what is contractually required, the proposed change, location and/or extent, benefits resulting from the change and effect on contract cost and delivery.

Submittals for review by the Government will be return mailed in accordance with the Phase Sequencing Graphic. Refer to Clause H01. Contractors shall plan their submittal schedules so as not to affect contract performance.

H06 CONSTRUCTION PLAN

After receipt of the Notice To Proceed with CLIN 0001A ENGINEERING & SCHEDULING, the Contractor shall develop and submit to the Contracting Officer's Representative the Contractor's proposed plan for the construction of the vessel.

The plan shall be prepared on USACE standard ENG Form 2454 (Construction Progress Chart) furnished by the Government. A copy of this form is included in Section J. The plan will be a summary level view of the contract. The plan will show the Contractor's proposed starting date, duration in weeks, ending date, and percentage completion (both as planned and as achieved) for all of the major activities of the contract. The plan shall also show the amount of the total bid price (percent and actual dollars) associated with each activity. The plan will also have the progress "S" curve plotted (both as planned and as achieved).

The activities shown on the chart shall be developed by the Contractor and shall include, as a minimum, the following:

- Direct Construction Labor, separated into principal vessel areas
- Material Purchases separated into principal vessel areas
- Material Deliveries separated into principal vessel areas
- Engineering
- Construction of modules
- Test and Trials
- Delivery (Shipment)
- Overhead and Profit

In addition, the following milestone events, as a minimum, shall be marked on the chart time-line:

- Award of Contract
- Notice to Proceed with “ENGINEERING & SCHEDULING”
- Notice To Proceed with “CONSTRUCT, TEST & DELIVER”
- Tests and Trials
- Final Inspection
- Provisional Acceptance
- Delivery
- Final Acceptance

After review, revision as necessary and approval by the COR; the plan shall be updated and submitted monthly with the Progress Payment Request.

H07 CONTRACTOR’S SAFETY PLAN

After Notice To Proceed with CLIN 0001AB, ENGINEERING AND SCHEDULING, the Contractor shall submit a Safety Plan for the facility at which the work is to be performed.

The Contractor’s Safety Plan shall outline the procedures used by the Contractor to ensure the safety of his employees and minimize lost-time accidents.

The Safety Plan shall identify by name and title the Contractor’s Safety Officer who is responsible for enforcing the Contractor’s safety rules and the Contractor’s designated “Competent Person” (29 CFR 1915.7) who is responsible for testing the atmosphere in confined and enclosed spaces. In the event that the Contractor has no designated “competent person,” a statement that a Marine Chemist will perform the tests and inspections which require a “competent person” shall be included with the Safety Plan, and the name of the Marine Chemist shall appear on the Subcontracting Plan (Clause H09).

H08 PROCUREMENT PLAN

After Notice To Proceed with CLIN 0001A and 0002A, ENGINEERING AND SCHEDULING, the Contractor shall submit a Procurement Plan for the vessel.

The Procurement Plan shall identify the major or schedule controlling components and equipment in the contract, estimated delivery time for each, the selected vendor and planned date of ordering.

The Procurement Plan shall be in "spread sheet" format and will later be developed into the Material and Equipment Schedule of clause H10.

Upon written approval of the Procurement Plan by the COR, the contractor may commence procurement of any or all of those items on the plan.

Costs for long lead items and materials, which are in the accepted procurement plan must be included on the bid schedule under line item 0001A and 0002A CONSTRUCT, TEST, AND DELIVER. Progress payments will be made in accordance with H20, PROGRESS PAYMENT BASED ON A PERCENTAGE OR STAGE OF COMPLETION.

H09 SUBCONTRACTING PLAN

After Notice To Proceed with CLIN 0001A and 0002A, ENGINEERING & SCHEDULING, the Contractor shall submit a Subcontracting Plan for the contract. This should not be confused with the SUBCONTRACTING PLAN required of Large Business as a part of their affirmative action responsibilities.

The Subcontracting Plan shall identify the areas or features of the contract or vessel which will be performed, all or in part by subcontractors. The plan shall identify the scope of work, subcontractor firm's name, and reference the subcontractor's proposal or letter of intent.

The Contractor shall provide copies of all pre and post contract correspondence between themselves and their representatives and all potential subcontractors when requested by the Contracting Officer's Representative.

The Subcontracting Plan shall specifically address the Contractor's plan for design and engineering.

The Subcontracting Plan shall be in “spread sheet” format and will be incorporated into the Material and Equipment Schedule of Clause H10.

Upon written approval of the Subcontracting Plan by the Contracting Officer’s Representative, the Contractor is authorized to proceed to place the subcontracts on the plan.

H10 MATERIALS AND EQUIPMENT SCHEDULE

After Notice To Proceed with CLIN 0001A and 0002A, ENGINEERING & SCHEDULING, the Contractor shall develop a schedule of all items, including major stock materials (excluding nuts, bolts, gaskets, consumables, etc.), to be used in the construction of the vessel. The schedule shall be prepared in “spread sheet” format and contain the following information for each vessel:

- Component/equipment
- Quantity
- Vendor name and address
- Make, model, and options
- Drawing references (if appropriate)
- Purchase Order or Contract Number
- Scheduled order date
- Actual order date
- Scheduled (promised) receipt at shipyard
- Actual receipt at shipyard

After submittal, review, revision and approval by the COR, the schedule shall be updated and submitted to the Government monthly. Final submission to MDC shall include priced copies of all purchase orders, purchase specifications and receipts.

Upon written approval of the schedule by the Contracting Officer’s Representative, the Contractor is authorized to proceed with procurement of all items and materials in the schedule.

At any time during the contract, the COR may request and the Contractor shall furnish, correspondence, telephone conversation records, priced copies of purchase orders, purchase specifications and material receipts or other records between the Contractor and the various subcontractors.

H11 SUBMITTAL SCHEDULE

After receipt of Notice To Proceed with CLIN 0001A and 0002B, ENGINEERING & SCHEDULING, the Contractor shall develop a submittal schedule for all Contractor submittals required by the contract (Refer to Clause H02).

The schedule shall be in “spread sheet” format and contain the following minimum information for each vessel:

- Drawing number (if any)
- Name or title of submittal
- Scheduled submittal date(s)
- Actual submittal date(s)
- Submittal letter number
- Reply letter number
- Reply letter date

For drawings or items with repetitive submittals (monthly, etc.) the schedule must allow for drawing review iterations or repetitive submissions.

After review, subsequent revision and approval by the COR, the schedule will be updated and submitted with the monthly Progress Payment Request for the life of the contract.

H12 DRAWING INDEX

After Notice To Proceed with CLIN 0001A and 0002A, ENGINEERING and SCHEDULING, the Contractor shall prepare an index of all drawings to be prepared by the Contractor as part of this contract. The list will be subdivided into two parts.

The first part shall list all the drawings the contractor intends or expects to prepare during the "ENGINEERING & SCHEDULING" phase of the contract. See Clause H13.

The second part shall list all As-Built drawings. The As-Built drawings shall consist of updated and corrected originals of all the drawings prepared by the Contractor (listed in the first part of this index) plus any standard drawings or details created by the Contractor during construction.

Both parts of this index shall be complete with drawing title, MDC Drawing Number, the Contractor's drawing number (if any) and scheduled submittal date.

H13 ENGINEERING AND DRAWINGS

A. ENGINEERING

The Contractor will perform engineering (prepare calculations, drawings, etc.) in order to:

- Develop the Final Design
- Obtain regulatory body approval
- Develop detailed piping and cable routings
- Develop detailed ducting routings
- Develop shop drawings
- Develop construction details
- Prepare complete bills of materials
- Obtain COR approval for NTP with Construction
- Complete As-Built drawings

All drawings and documents prepared by the contractor or substantively modified by the contractor shall be forwarded to the Marine Design Center for review, comment, and acceptance.

It is the responsibility of the Contractor to schedule submission of the listed drawings/documents to allow for review by MDC, without adversely affecting the construction schedule or submittals to regulatory bodies (refer to Clause H02).

B. DRAWINGS

All drawings shall be prepared in CADD form, and shall conform to the American National Standards Institute (ANSI) Standard Y14. Drawings shall be flat, folded to 8 1/2" x 11" size and trimmed to within 1/2" of the outer border. Drawing size shall be format A (horizontal or vertical) or D as defined by ANSI Y14.1. In no case will drawings of any other size or format be accepted. Title blocks shall conform to ANSI dimensions and shall be submitted to MDC for approval before use. Drawings of two or more sheets shall have follow-on sheets titled according to ANSI Y14.1 for continuation sheets and shall not be separately titled.

Four copies of each drawing, calculation, report, or document shall be submitted to MDC for review. Only if appropriate numbers of copies are submitted will one copy be returned to the Contractor showing the Government review action.

One copy of each drawing or document reviewed and stamped by ABS with its associated ABS comment letter shall be provided to the COR.

C. DESIGN OUTLINE

The "ENGINEERING & SCHEDULING" phase design effort to complete the Final Design shall include the preparation of drawings, calculations, and reports that address the topics listed on the following guidance index. Refer to Clause H03 for basic level of detail guidance for all vessel systems and refer to the specific clauses of SECTION C for any detailed requirements. It is acceptable to combine details and features on drawings.

CLIN 0001

DRAWING NO.	TITLE	DELIVERABLE
• 665-C000-01	TITLE SHEET & DRAWING INDEX	DRAWING
• 665-C105-01	LINES PLAN	DRAWING
• 665-C115-01	WEIGHT ESTIMATE	REPORT
• 665-C125-02	HYDROSTATIC PROPERTIES	REPORT
• 665-C130-01	TANK CAPACITY TABLES	BOOKLET
• 665-C150-01	DAMAGED STABILITY	REPORT
• 665-C155-01	INTACT STABILITY REPORT	
• 665-C155-02	TRIM & STABILITY	BOOKLET
• 665-C170-01	DRYDOCKING PLAN	DRAWING
• 665-C180-01	NOISE AND VIBRATION CONTROL	REPORT
• 665-C185-02	DEADWEIGHT SURVEY	REPORT
• 665-C205-01	OUTBOARD PROFILE	DRAWING
• 665-C215-01	GENERAL ARRANGEMENT	DRAWING
• 665-C245-01	MACHINERY ARRANGEMENT	DRAWING
• 665-C306-01	TYPICAL STRUCTURAL DETAILS	BOOKLET
• 665-C307-01	SHELL STRUCTURE	DRAWING
• 665-C308-01	DECK STRUCTURE	DRAWING
• 665-C309-01	TRANSVERSE STRUCTURE	DRAWING
• 665-C311-01	LONGITUDINAL STRUCTURE	DRAWING
• 665-C315-01	DECKHOUSE STRUCTURE	DRAWING
• 665-C317-01	MASTS & SERVICE STRUCTURES	DRAWING
• 665-C320-01	TANK STRUCTURE	DRAWING
• 665-C325-01	SEA CHEST STRUCTURE	DRAWING
• 665-C330-01	FOUNDATION STRUCTURE	DRAWING
• 665-C399-01	STRUCTURAL CALCULATIONS	BOOKLET
• 665-C405-01	COATING SYSTEM	BOOKLET
• 665-C415-01	DOORS, WINDOWS, HATCHES & MANHOLES	DRAWING
• 665-C420-01	DECK FITTINGS	DRAWING
• 665-C425-01	WALKWAYS, RAILINGS & GRATINGS	DRAWING
• 665-C427-01	VERTICAL AND INCLINED LADDERS	DRAWING
• 665-C430-01	DECK COVERINGS	DRAWING
• 665-C435-01	INSULATION, WALL COVERINGS	DRAWING
• 665-C445-01	LIFESAVING AND SAFETY EQUIPMENT	DRAWING
• 665-C460-01	HULL MARKINGS	DRAWING
• 665-C550-01	SPUDS	DRAWING
• 665-C552-01	SPUDWELLS	DRAWING
• 665-C554-01	SPUD HANDLING SYSTEM	DRAWING
• 665-C630-01	FUEL OIL SYSTEM	DRAWING
• 665-C637-01	LUBE OIL AND WASTE OIL SYSTEM	DRAWING

• 665-C640-01	ENGINE COOLING SYSTEM	DRAWING
• 665-C645-01	RAW WATER/FIREMAIN SYSTEM	DRAWING
• 665-C650-01	ENGINE EXHAUST SYSTEM	DRAWING
• 665-C660-01	BILGE & BALLAST SYSTEM	DRAWING
• 665-C667-01	SANITARY & SEWAGE SYSTEM	DRAWING
• 665-C670-01	VENTS, SOUNDS & OVERFLOWS	DRAWING
• 665-C672-01	DRAINAGE SYSTEM	DRAWING
• 665-C677-01	FIXED FIRE EXTINGUISHING SYSTEM	DRAWING
• 665-C678-01	FIRE DETECTION AND ALARM SYSTEM	DRAWING
• 665-C679-01	FIRE SAFETY EQUIPMENT	DRAWING
• 665-C685-01	HEATING, VENTILATION & AIR CONDITIONING	DRAWING
• 665-C690-01	COMPRESSED AIR SYSTEM	DRAWING
• 665-C692-02	ALARM SYSTEMS	DRAWING
• 665-C710-01	ELECTRICAL LOAD ANALYSIS	DRAWING
• 665-C715-01	FAULT CURRENT ANALYSIS	DRAWING
• 665-C720-01	ONE LINE DIAGRAM (AC)	DRAWING
• 665-C725-01	CABLING DIAGRAM	DRAWING
• 665-C725-02	CABLE SCHEDULE & VOLTAGE DROP ANALYSIS	DRAWING
• 665-C730-01	LIGHTING ARRANGEMENT & DETAILS	DRAWING
• 665-C740-01	SWITCHBOARD ARRANGEMENT & DETAILS	DRAWING
• 665-C745-01	POWER DISTRIBUTION PANELS	DRAWING
• 665-C760-01	SHORE POWER DETAILS	DRAWING

CLIN 0002

DRAWING NO.	TITLE	DELIVERABLE
• 667-D105-01,	HULL LINES	DRAWING
• 667-D205-01,	OUTBOARD PROFILE	DRAWING
• 667-D215-01,	GENERAL ARRANGEMENTS	DRAWING
• 667-D305-01,	DECK SCANTLINGS	DRAWING
• 667-D305-02,	BOTTOM SCANTLINGS	DRAWING
• 667-D307-01,	SIDE SHELL SCANTLINGS	DRAWING
	DRAWING	
• 667-D309-01,	TRANSVERSE FRAMES	DRAWING
• 667-D311-01,	RAKE STRUCTURAL DETAILS	DRAWING
• 667-D427-01,	MISCELLANEOUS DETAILS	DRAWING

H14 “AS-BUILT” DRAWINGS

In order to provide a record of each “As-Built” vessel the Contractor shall update the FINAL DESIGN drawings, calculations, reports, and documents to clearly show the construction, details and systems of each vessel at the time of its delivery.

All of the drawings, reports and documents shown on the Submittal Schedule required by Clause H11 and the Drawing Index required by Clause H12 will be updated and corrected to form an “As-Built” record of each vessel.

The “As-Built” materials for each vessel shall be delivered as follows:

1. Prior to FINAL INSPECTION, the Contractor shall submit one set of prints of the “As-Built” drawings for review and approval.
2. Prior to PROVISIONAL ACCEPTANCE, the Contractor shall provide the following:
 - Two sets of black or blue line prints of all “As-Built” drawings.
 - One set of high quality (original) Mylar reproducibles of all “As-Built” drawings.
 - Four sets of electronic “As-Built” drawings. Two sets of files shall be provided on DVD. The other two sets of files shall be provided on 4-3/4 650 MB 74 min digital compact disk (CD). All files shall be provided in Tag Image Format, (“*.tif” file format). Each drawing sheet shall be a separate electronic file with a filename, which conforms to the file naming convention below. Compression utilities such as PKZIP® may not be used.
 - Four sets of electronic files of all calculations and reports. Two sets of files shall be provided on DVD. The other two sets of files shall be provided on 4-3/4 650 MB 74 min digital compact disk (CD). All files shall be provided in Adobe Acrobat “*.pdf” file format. Each set of calculations or complete report shall be a separate electronic file with a filename, which conforms to the file naming convention below. Compression utilities such as PKZIP® may not be used.

- Four sets of electronic files of all CADD prepared drawings. Two sets of files shall be provided on DVD. The other two sets of files shall be provided on 4-3/4 650 MB 74 min digital compact disk (CD). All files shall be provided in AutoCAD 2000 dwg file format or higher. Each drawing sheet shall be a separate electronic file with a filename, which conforms to the file naming convention below. Compression utilities such as PKZIP® may not be used.
3. Each complete set of files on CD and DVD shall be labeled, indexed in numerical order by filename furnished in protective plastic sleeves and on the CD cover sheet.
4. Files furnished on CD and DVD shall be encased in standard plastic jewel boxes. Slim line jewel cases will not be acceptable.

Filenames: Drawing files shall be named based on the drawing phase, WBS number, task number, sheet number, and revision number. The following example will illustrate the naming convention:

- For the third sheet of a multi-sheet drawing with a drawing number of 556-A720-02 and a revision of "C" the drawing filename would be A720023C.

The direct relationship between the drawing number and the drawing filename is as follows:

	<u>Drawing Number</u>	<u>Drawing Filename</u>
<u>Design Phase</u>	The fourth character, A in the example.	The first character, A.
<u>WBS Indicator</u>	The fifth through seventh characters, 720 in the example.	The second through fourth characters, 720.
<u>Task Number</u>	The eighth and ninth characters, 02 in the example.	The fifth and sixth characters, 02.
<u>Sheet Number</u>	The tenth character, 3 in the example.	The seventh character, 3.
<u>Revision Indicator</u>	The eleventh character, C in the example.	The eighth character, C.

<u>File Extension</u>				.DWG
<u>Dwg. Number</u>	A 720 - 02	<u>Sheet 3</u>	<u>Revision C</u>	
<u>Dwg. Filename</u>	A 720 02	3	C .DWG	

The Government shall have unlimited use of the drawings listed on the drawing as defined in the GOVERNMENT RIGHTS IN TECHNICAL DATA clause (see Section I).

H15 SUBSTITUTIONS

“Substitution” as used in this clause, is an administrative action, not resulting in a contract change of cost or time.

Prior to issuance of a NTP with “Construct, Test and Deliver,” the Contractor shall prepare and submit a comprehensive list and analysis of any Contractor proposed substitutions of the equipment and materials required in the contract.

The Substitution List shall be limited to equipment and materials specifically required by the contract. Equipment and Materials where the contractor has selection responsibility (i.e. “similar to”) are not to be included in the list.

Each proposed substitution shall be accompanied with a detailed analysis and comparison of the equipment or materials specified and the equipment or materials proposed, including features, dimensions, performance characteristics, benefit to the Government, and the compelling reason why the substitution should be made. In the absence of compelling reasons for making the substitution, the contractor’s proposal may be denied.

Should the substitution be accepted, the Contractor shall be responsible for integrating the substitution into the design at no increase in contract cost or no extension of contract completion. Such modifications to the design must be completed, submitted for approval, revised as necessary and accepted by the COR prior to issuing a NTP with Construct, Test and Deliver.

The Contractor bears ultimate responsibility for satisfactory performance of all systems impacted or affected by an accepted substitution as well as the operation of each completed vessel, as affected by the substitution.

Once a NTP with Construct, Test and Deliver has been issued, substitutions will not be considered.

H16 MANUFACTURER OR SUBCONTRACTOR DRAWINGS AND MANUALS

For each vessel, the Contractor shall provide three complete sets of drawings and manuals for each piece of machinery and equipment provided by the Contractor; that clearly describe the operation, construction, maintenance, repair, adjustment, lubrication, parts lists and “trouble shooting” of every item of machinery and equipment.

Manuals shall be in the English language with all dimensions in the foot-pound-second systems of units. Manuals shall be no larger than 8 inches x 11 inches, and bound in hard covers of durable materials.

Manufacturer’s or subcontractor’s drawings may be included in the manual but must be folded to page size.

Drawings not suitable for inclusion in the manuals must be considered as engineering and design drawings and shall be prepared and submitted in accordance with the requirements of Clause H13, ENGINEERING AND DRAWINGS.

At least 30 days prior to FINAL INSPECTION of each vessel, one set of the manuals shall be submitted to the Contracting Officer’s Representative for review, comment and/or approval. This set of manuals will be returned to the Contractor with approval or comments.

Final submittal of the manuals shall consist of three sets of the manuals and must be completed prior to PROVISIONAL ACCEPTANCE of each vessel.

If photocopies (Xerox or similar) of parts lists, text, diagrams, etc., are furnished, one of the sets shall be a “Master” and must be made up of all “original” sheets and be clearly identified as the “Master” copy. Photocopies will be clear with high black/white contrast, sharp lines, full sheet reproduction, and no background shadow or clutter.

Where catalog “cut-sheets” are provided, all information not pertinent to the equipment or machinery provided shall be obliterated.

H17 OPERATOR'S MANUAL

The Contractor shall prepare and furnish an Operator's Manual customized for CLIN 0001, which is intended to be a guide to the operation, maintenance, and utilization of the various systems on the vessel and the vessel itself. A manual is not required for CLIN 0002.

The manual shall be arranged such that an operator can get a quick overview and understanding of a system and its operation, with specific steps and guidelines to clearly affect system actuation, control and shutdown.

The manual shall also include specific maintenance instructions for each system, and item of equipment.

The manual shall contain simplified and reduced size arrangement and schematic and/or diagrammatic-on-arrangement drawings of each vessel system.

The manual shall be bound in hard cover binders of a durable material.

Three copies of the manual shall be provided prior to Final Acceptance of each vessel. One copy shall be the "Master" copy and shall contain the original typed or reproducible version of the manual. An electronic copy of the "Master" shall be provided.

The Government shall have unlimited use of the material listed on these manuals as defined in the GOVERNMENT RIGHTS IN TECHNICAL DATA clause (see Section I).

H18 RECORD PHOTOGRAPHS

A. CONSTRUCTION PROGRESS PHOTOGRAPHS

The Contractor shall provide monthly photographs deliverable in digital format. The photographs shall document the construction progress, the launching, and tests and trials of each vessel.

The photographs shall be provided via e-mail. Photographs shall be JPG file format of at least SVGA Resolution, 24-bit color depth, and at a compression ratio no greater than 25% (75% Quality).

For each vessel, approximately 15-20 photographs shall be provided monthly. The quantity of photographs shall be commensurate with the level of production.

B. FINAL PHOTOGRAPHS

Final Photographs are required for CLIN 0001 only.

1. Digital Photography Requirements

A minimum of 50 different digital photograph interior shots showing all deckhouse and machinery spaces shall be provided by the Contractor. The interior shots shall be taken from different angles in each space to show the equipment arrangement and space layout. The digital photograph files for each vessel shall be provided on 4-3/4 650 MB 74 min digital compact disk(CD), 2 complete copies shall be provided to the Government. Individual sets shall be supplied for each vessel.

2. Color Film Photography Requirements

The Contractor shall furnish the services of a professional photographer to take regular color photographs of each completed vessel.

A minimum of 10 different exterior photographs, using color photograph film, shall be taken to include:

- a. Profile view of each side
- b. Profile view of each end
- c. Profile views of each vessel corner
- d. Plan or overhead view of the vessel

The Contractor shall provide one negative and ten prints for each of two exterior shots, which will be selected by the COR upon review of shipyard exterior photos. Color prints shall be 8-inch x 10-inch. (Total of 20 prints).

The COR shall select two shots from the exterior view photos, which shall be custom printed in 11 x 14 size, professionally mounted, double matted and framed under clear glass in suitable wooden frame. Two sets of each picture shall be furnished to the Contracting Officer's Representative (total of four matted and framed photos), for each vessel.

H19 GOVERNMENT PROPERTY

All Government-Furnished equipment and equipment for which the Government has made payment or partial payment shall be considered Government Property.

The Contractor shall accept all risk for Government property in his possession.

The Contractor shall maintain an inventory of all Government Property, update and submit the inventory monthly.

All Government Property shall be stored in enclosed, weather tight secure, warehouse buildings. Security shall consist of restricted access, locked and fenced storage. Warehouse buildings shall be heated above freezing and ventilated to prevent condensation or sweating.

H20 PROGRESS PAYMENT BASED ON PERCENTAGE OR STAGE OF COMPLETION

The Government shall pay the Contractor the contract price as provided in this contract.

The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets standards of quality established under the contract, as accepted by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of work, in such detail as requested, to provide a basis for determining progress payments. In the preparation of estimates, the Contracting Officer may authorize payment for material delivered to the site and at locations other than the site may also be taken into consideration if---

- Consideration is specifically authorized by this contract; and
- The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

If the Contracting Officer finds that satisfactory progress was achieved during any period for which progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of fifteen percent (15%) of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all remaining withheld funds.

All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be considered as---

- Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or
- Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including co-insurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provision preceding shall not apply to that portion of progress payments attributed to bond premiums.

The Government shall pay the amount due the Contractor under this contract after---

- Completion and acceptance of all work; and
- Presentation of a properly executed voucher.

Notwithstanding any other provision of this contract, progress payments shall not exceed eighty percent (80%) on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes Clause, or funding and other administrative changes.

Section I - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (DEC 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Commercial item means--

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that--

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for--

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if--

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services--

(i) Catalog price means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) Market prices means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in subparagraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

(d) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(e) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(g) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(h) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the

Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995)

(a) Except as provided in (b) of this clause, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) of this clause does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract which exceed \$100,000.

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

- (1) Providing or attempting to provide or offering to provide any kickback;
 - (2) Soliciting, accepting, or attempting to accept any kickback; or
 - (3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.
- (c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.
- (2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.
- (3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.
- (4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.
- (5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by

section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

- (1) Cancel the solicitation, if the contract has not yet been awarded or issued; or
- (2) Rescind the contract with respect to which--
 - (i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--
 - (A) Exchanging the information covered by such subsections for anything of value; or
 - (B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or
 - (ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.
- (b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.
- (c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

- (a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.
- (b) The price or fee reduction referred to in paragraph (a) of this clause shall be--
 - (1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;
 - (2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the

time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

- (i) The base fee established in the contract at the time of contract award;
- (ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

- (i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or
- (ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting

Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

- (a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.
- (b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.
- (c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the contract, subcontract, or modification; or

(4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

52.215-8 ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (OCT 1997)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order:

- (a) The Schedule (excluding the specifications).
- (b) Representations and other instructions.
- (c) Contract clauses.
- (d) Other documents, exhibits, and attachments.
- (e) The specifications.

52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

(b) If any price, including profit or fee, negotiated in connection with any modification under this clause, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

(c) Any reduction in the contract price under paragraph (b) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

- (1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d)(1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price

reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

52.215-13 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall--

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

52.215-14 INTEGRITY OF UNIT PRICES (OCT 1997)

(a) Any proposal submitted for the negotiation of prices for items of supplies shall distribute costs within contracts on a basis that ensures that unit prices are in proportion to the items' base cost (e.g., manufacturing or acquisition costs). Any method of distributing costs to line items that distorts unit prices shall not be used. For example, distributing costs equally among line items is not acceptable except when there is little or no variation in base cost. Nothing in this paragraph requires submission of cost or pricing data not otherwise required by law or regulation.

(b) When requested by the Contracting Officer, the Offeror/Contractor shall also identify those supplies that it will not manufacture or to which it will not contribute significant value.

The Contractor shall insert the substance of this clause, less paragraph (b), in all subcontracts for other than: acquisitions at or below the simplified acquisition threshold in FAR Part 2; construction or architect-engineer services under FAR Part 36; utility services under FAR Part 41; services where supplies are not required; commercial items; and petroleum products.

52.215-15 PENSION ADJUSTMENTS AND ASSET REVERSIONS (DEC 1998)

(a) The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate a defined-benefit pension plan or otherwise recapture such pension fund assets.

(b) For segment closings, pension plan terminations, or curtailment of benefits, the adjustment amount shall be the amount measured, assigned, and allocated in accordance with 48 CFR 9904.413-50(c)(12) for contracts and subcontracts that are subject to Cost Accounting Standards (CAS) Board rules and regulations (48 CFR Chapter 99). For contracts and subcontracts that are not subject to CAS, the adjustment amount shall be the amount measured, assigned, and allocated in accordance with 48 CFR 9904.413-50(c)(12), except the numerator of the fraction at 48 CFR 9904.413-50(c)(12)(vi) shall be the sum of the pension plan costs allocated to all non-CAS-covered contracts and subcontracts that are subject to Federal Acquisition Regulation (FAR) Subpart 31.2 or for which cost or pricing data were submitted.

(c) For all other situations where assets revert to the Contractor, or such assets are constructively received by it for any reason, the Contractor shall, at the Government's option, make a refund or give a credit to the Government for its equitable share of the gross amount withdrawn. The Government's equitable share shall reflect the Government's participation in pension costs through those contracts for which cost or pricing data were submitted or that are subject to FAR Subpart 31.2.

(d) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(g).

52.215-18 REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (OCT 1997)

The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate or reduce a PRB plan. If PRB fund assets revert, or inure, to the Contractor or are constructively received by it under a plan termination or otherwise, the Contractor shall make a refund or give a credit to the Government for its equitable share as required by FAR 31.205-6(o)(6). The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirements of FAR 15.408(j).

52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall--

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

The Contractor shall include the substance of this clause in all subcontracts under this

contract that meet the applicability requirement of FAR 15.408(k).

52.219-6 NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (JUL 1996)

(a) Definition.

"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

(b) General. (1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to a small business concern.

(c) Agreement. A small business concern submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States. The term "United States" includes its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed \$25,000, a small business concern may furnish the product of any domestic firm. This paragraph does not apply in connection with construction or service contracts.

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further

agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer.

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis;
 - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
 - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
 - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

- (a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
- (b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
- (c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

52.222-26 EQUAL OPPORTUNITY (APR 2002)

- (a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance

Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

(a)) Definitions. As used in this clause--

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Employment;

(ii) Upgrading;

(iii) Demotion or transfer;

(iv) Recruitment;

(v) Advertising;

(vi) Layoff or termination;

(vii) Rates of pay or other forms of compensation; and

(viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the

Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form

R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(a) Definitions. As used in this clause:

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitute a not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo or community, including native villages and native groups (including corporations organized by Kenai, Juneau,

Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1542(c).

"Interested party" means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street, NW., MS 2626-MIB, Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

- (i) The estimated cost of a cost-type contract.
- (ii) The target cost of a cost-plus-incentive-fee prime contract.
- (iii) The target cost and ceiling price of a fixed-price incentive prime contract.
- (iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101 to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

52.232-9 LIMITATION ON WITHHOLDING OF PAYMENTS (APR 1984)

If more than one clause or Schedule term of this contract authorizes the temporary withholding of amounts otherwise payable to the Contractor for supplies delivered or services performed, the total of the amounts withheld at any one time shall not exceed the greatest amount that may be withheld under any one clause or Schedule term at that time; provided, that this limitation shall not apply to--

- (a) Withholdings pursuant to any clause relating to wages or hours of employees;
- (b) Withholdings not specifically provided for by this contract;
- (c) The recovery of overpayments; and
- (d) Any other withholding for which the Contracting Officer determines that this limitation is inappropriate.

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986) - ALTERNATE I (APR 1984)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the

preceding sentence. Unless otherwise stated in this contract, payments to an assignee of any amounts due or to become due under this contract shall not, to the extent specified in the Act, be subject to reduction or setoff.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

52.232-25 PROMPT PAYMENT (FEB 2002)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer (EFT). Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(4) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Due date. (i) Except as indicated in paragraphs (a)(2) and (c) of this clause, the due date for making invoice payments by the designated payment office is the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(ii) of this clause).

(B) The 30th day after Government acceptance of supplies delivered or services performed. For a final invoice, when the payment amount is subject to contract settlement actions, acceptance is deemed to occur on the effective date of the contract settlement.

(ii) If the designated billing office fails to annotate the invoice with the actual date of receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Certain food products and other payments. (i) Due dates on Contractor invoices for meat, meat food products, or fish; perishable agricultural commodities; and dairy products, edible fats or oils, and food products prepared from edible fats or oils are--

(A) For meat or meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)), and as further defined in Pub. L. 98-181, including any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, as close as possible to, but not later than, the 7th day after product delivery.

(B) For fresh or frozen fish, as defined in section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 4003(3)), as close as possible to, but not later than, the 7th day after product delivery.

C) For perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(D) For dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, and food products prepared from edible fats or oils, as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received. Liquid milk, cheese, certain processed cheese products, butter, yogurt, ice cream, mayonnaise, salad dressings, and other similar products, fall within this classification. Nothing in the Act limits this classification to refrigerated products. When questions arise regarding the proper classification of a specific product, prevailing industry practices will be followed in specifying a contract payment due date. The burden of proof that a classification of a specific product is, in fact, prevailing industry practice is upon the Contractor making the representation.

(ii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

(3) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(3)(i) through (a)(3)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils), with the reasons why it is not a proper invoice. The Government will take into account untimely notification when computing any interest penalty owed the Contractor.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of the mailing or transmission.)

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, discount for prompt payment terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract (e.g., evidence of shipment).

(4) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(4)(i) through (a)(4)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment, and there was no disagreement over quantity, quality, or Contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(5) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance is deemed to occur constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivers the supplies or performs the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. If actual acceptance occurs within the constructive acceptance period, the Government will base the determination of an interest penalty on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(6) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(7) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(7)(ii) of this clause, postmarked not later than 40 days after the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payment. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Fast payment procedure due dates. If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

(d) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the

Government shall mail the payment information to the remittance address contained in the CCR database.

52.233-1 DISPUTES. (JUL 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the

Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall

be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

52.243-1 CHANGES--FIXED-PRICE (APR 1984)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in any one or more of the following:

(1) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the Government in accordance with the drawings, designs, or specifications.

(2) Method of shipment or packing.

(3) Place of delivery.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)

(a) The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the

contract.

(b) If the Contractor is an approved mentor under the Department of Defense Pilot Mentor-Protege Program (Pub. L. 101-510, section 831 as amended), the Contractor may award subcontracts under this contract on a noncompetitive basis to its proteges.

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (MAY 2002)

(a) Definitions. As used this clause--

"Commercial item", has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (JUN 2000) (46 U.S.C. Appx 1241) (flowdown not required for subcontracts awarded beginning May 1, 1996).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

52.246-1 CONTRACTOR INSPECTION REQUIREMENTS (APR 1984)

The Contractor is responsible for performing or having performed all inspections and tests necessary to substantiate that the supplies or services furnished under this contract conform to contract requirements, including any applicable technical requirements for specified manufacturers' parts. This clause takes precedence over any Government inspection and testing required in the contract's specifications, except for specialized inspections or tests specified to be performed solely by the Government.

52.248-1 VALUE ENGINEERING (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any net acquisition savings realized from accepted VECP's, in accordance with the incentive sharing rates in paragraph (f) below.

(b) Definitions. "Acquisition savings," as used in this clause, means savings resulting from the application of a VECP to contracts awarded by the same contracting office or its successor for essentially the same unit. Acquisition savings include--

(1) Instant contract savings, which are the net cost reductions on this, the instant contract, and which are equal to the instant unit cost reduction multiplied by the number of instant contract units affected by the VECP, less the Contractor's allowable development and implementation costs;

(2) Concurrent contract savings, which are net reductions in the prices of other contracts that are definitized and ongoing at the time the VECP is accepted; and

(3) Future contract savings, which are the product of the future unit cost reduction multiplied by the number of future contract units in the sharing base. On an instant contract, future contract savings include savings on increases in quantities after VECP acceptance that are due to contract modifications, exercise of options, additional orders, and funding of subsequent year requirements on a multiyear contract.

"Collateral costs," as used in this clause, means agency cost of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contracting office" includes any contracting office that the acquisition is transferred to, such as another branch of the agency or another agency's office that is performing a joint acquisition action.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Future unit cost reduction," as used in this clause, means the instant unit cost reduction adjusted as the Contracting Officer considers necessary for projected learning or changes in quantity during the sharing period. It is calculated at the time the VECP is accepted and applies either (1) throughout the sharing period, unless the Contracting Officer decides that recalculation is necessary because conditions are significantly different from those previously anticipated or (2) to the calculation of a lump-sum payment, which cannot later be revised.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistics support. The term does not include the normal administrative costs of processing the VECP or any increase in this contract's cost or price resulting from negative instant contract savings.

"Instant contract," as used in this clause, means this contract, under which the VECP is submitted. It does not include increases in quantities after acceptance of the VECP that are due to contract modifications, exercise of options, or additional orders. If this is a multiyear contract, the term does not include quantities funded after VECP acceptance. If this contract is a fixed-price contract with prospective price redetermination, the term refers to the period for which firm prices have been established.

"Instant unit cost reduction" means the amount of the decrease in unit cost of performance (without deducting any Contractor's development or implementation costs) resulting from using the VECP on this, the instant contract. If this is a service contract, the instant unit cost reduction is normally equal to the number of hours per line-item task saved by using the VECP on this contract, multiplied by the appropriate contract labor rate.

"Negative instant contract savings" means the increase in the cost or price of this contract when the acceptance of a VECP results in an excess of the Contractor's allowable development and implementation costs over the product of the instant unit cost reduction multiplied by the number of instant contract units affected.

"Net acquisition savings" means total acquisition savings, including instant, concurrent, and future contract savings, less Government costs.

"Sharing base," as used in this clause, means the number of affected end items on contracts of the contracting office accepting the VECP.

Sharing period, as used in this clause, means the period beginning with acceptance of the first unit incorporating the VECP and ending at a calendar date or event determined by the contracting officer for each VECP.

"Unit," as used in this clause, means the item or task to which the Contracting Officer and the Contractor agree the VECP applies.

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the overall projected cost to the agency without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only;

(ii) In research and development (R&D) end items or R&D test quantities that is due solely to results of previous testing under this contract; or

(iii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (8) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and the proposed requirement, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, the effect of the change on the end item's performance, and any pertinent objective test data.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) Identification of the unit to which the VECP applies.

(4) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under the Subcontracts paragraph of this clause, below.

(5) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(6) A prediction of any effects the proposed change would have on collateral costs to the agency.

(7) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(8) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Contracting Officer, unless this contract states otherwise. If this contract is administered by other than the contracting office, the Contractor shall submit a copy of the VECP simultaneously to the Contracting Officer and to the Administrative Contracting Officer.

(e) Government action. (1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause and made either before or within a reasonable time after contract performance is completed. Until such a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing rates. If a VECP is accepted, the Contractor shall share in net acquisition savings according to the percentages shown in the table below. The percentage paid the Contractor depends upon (1) this contract's type (fixed-price, incentive, or cost-reimbursement), (2) the sharing arrangement specified in paragraph (a) above (incentive, program requirement, or a combination as delineated in the Schedule), and (3) the source of the savings (the instant contract, or concurrent and future contracts), as follows:

CONTRACTOR'S SHARE OF NET ACQUISITION SAVINGS

(Figures in percent)

Contract Type	Incentive (Voluntary)		Program Requirement (Mandatory)	
	Instant Contract Rate	Concurrent and Future Contract Rate	Instant Contract Rate	Concurrent and Future Contract Rate
Fixed-price (includes fixed-price-award-fee; excludes other fixed-price incentive contracts)	(1) 50	(1) 50	(1) 25	25
Incentive (fixed-price or cost) (other than award fee)	(2)	(1) 50	(1) 50	25
Cost-reimbursement (includes cost-plus-award-fee; excludes other cost-type incentive Contracts)	(3) 25	(3)	15	15

(1) The Contracting Officer may increase the Contractor's sharing rate to as high as 75 percent for each VECP.

(2) Same sharing arrangement as the contract's profit or fee adjustment formula.

(3) The Contracting Officer may increase the Contractor's sharing rate to as high as 50 percent for each VECP.

(g) Calculating net acquisition savings.

(1) Acquisition savings are realized when (i) the cost or price is reduced on the instant contract, (ii) reductions are negotiated in concurrent contracts, (iii) future contracts are awarded, or (iv) agreement is reached on a lump-sum payment for future contract savings (see subparagraph (i)(4) below). Net acquisition savings are first realized, and the Contractor shall be paid a share, when Government costs and any negative instant contract savings have been fully offset against acquisition savings.

(2) Except in incentive contracts, Government costs and any price or cost increases resulting from negative instant contract savings shall be offset against acquisition savings each time such savings are realized until they are fully offset. Then, the Contractor's share is calculated by multiplying net acquisition savings by the appropriate Contractor's percentage sharing rate (see paragraph (f) above). Additional Contractor shares of net acquisition savings shall be paid to the Contractor at the time realized.

(3) If this is an incentive contract, recovery of Government costs on the instant contract shall be deferred and offset against concurrent and future contract savings. The Contractor shall share through the contract incentive structure in savings on the instant contract items affected. Any negative instant contract savings shall be added to the target cost or to the target price and ceiling price, and the amount shall be offset against concurrent and future contract savings.

(4) If the Government does not receive and accept all items on which it paid the Contractor's share, the Contractor shall reimburse the Government for the proportionate share of these payments.

(h) Contract adjustment. The modification accepting the VEC (or a subsequent modification issued as soon as possible after any negotiations are completed) shall--

(1) Reduce the contract price or estimated cost by the amount of instant contract savings, unless this is an incentive contract;

(2) When the amount of instant contract savings is negative, increase the contract price, target price and ceiling price, target cost, or estimated cost by that amount;

(3) Specify the Contractor's dollar share per unit on future contracts, or provide the lump-sum payment;

(4) Specify the amount of any Government costs or negative instant contract savings to be offset in determining net acquisition savings realized from concurrent or future contract savings; and

(5) Provide the Contractor's share of any net acquisition savings under the instant contract in accordance with the following:

(i) Fixed-price contracts--add to contract price.

(ii) Cost-reimbursement contracts--add to contract fee.

(i) Concurrent and future contract savings.

(1) Payments of the Contractor's share of concurrent and future contract savings shall be made by a modification to the instant contract in accordance with subparagraph (h)(5) above. For incentive contracts, shares shall be added as a separate firm-fixed-price line

item on the instant contract. The Contractor shall maintain records adequate to identify the first delivered unit for 3 years after final payment under this contract.

(2) The Contracting Officer shall calculate the Contractor's share of concurrent contract savings by (i) subtracting from the reduction in price negotiated on the concurrent contract any Government costs or negative instant contract savings not yet offset and (ii) multiplying the result by the Contractor's sharing rate.

(3) The Contracting Officer shall calculate the Contractor's share of future contract savings by (i) multiplying the future unit cost reduction by the number of future contract units scheduled for delivery during the sharing period, (ii) subtracting any Government costs or negative instant contract savings not yet offset, and (iii) multiplying the result by the Contractor's sharing rate.

(4) When the Government wishes and the Contractor agrees, the Contractor's share of future contract savings may be paid in a single lump sum rather than in a series of payments over time as future contracts are awarded. Under this alternate procedure, the future contract savings may be calculated when the VECF is accepted, on the basis of the Contracting Officer's forecast of the number of units that will be delivered during the sharing period. The Contractor's share shall be included in a modification to this contract (see subparagraph (h)(3) above) and shall not be subject to subsequent adjustment.

(5) Alternate no-cost settlement method. When, in accordance with subsection 48.104-4 of the Federal Acquisition Regulation, the Government and the Contractor mutually agree to use the no-cost settlement method, the following applies:

(i) The Contractor will keep all the savings on the instant contract and on its concurrent contracts only.

(ii) The Government will keep all the savings resulting from concurrent contracts placed on other sources, savings from all future contracts, and all collateral savings.

(j) Collateral savings. If a VECF is accepted, the Contracting Officer will increase the instant contract amount, as specified in paragraph (h)(5) of this clause, by a rate from 20 to 100 percent, as determined by the Contracting Officer, of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price, target price, target cost, or estimated cost, at the time the VECF is accepted, or \$100,000, whichever is greater. The Contracting Officer will be the sole determiner of the amount of collateral savings.

(k) Relationship to other incentives. Only those benefits of an accepted VECF not rewardable under performance, design-to-cost (production unit cost, operating and support costs, reliability and maintainability), or similar incentives shall be rewarded under this clause. However, the targets of such incentives affected by the VECF shall not be adjusted because of VECF acceptance. If this contract specifies targets but provides no

incentive to surpass them, the value engineering sharing shall apply only to the amount of achievement better than target.

(l) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$100,000 or more and may include one in subcontracts of lesser value. In calculating any adjustment in this contract's price for instant contract savings (or negative instant contract savings), the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs, and any value engineering incentive payments to a subcontractor, clearly resulting from a VECP accepted by the Government under this contract. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that the payments shall not reduce the Government's share of concurrent or future contract savings or collateral savings.

(m) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering clause of contract, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

- (1) Stop work as specified in the notice.
 - (2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.
 - (3) Terminate all subcontracts to the extent they relate to the work terminated.
 - (4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
 - (5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.
 - (6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.
 - (7) Complete performance of the work not terminated.
 - (8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.
 - (9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.
- (c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.
- (d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor

may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

(i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(2)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(2)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(3) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(c) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) “Arising out of a contract with the DoD” means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) “Conviction of fraud or any other felony” means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) “Date of conviction” means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

The term "pricing adjustment," as used in paragraph (a) of the clauses entitled "Price Reduction for Defective Cost or Pricing Data - Modifications," "Subcontractor Cost or Pricing Data," and "Subcontractor Cost or Pricing Data - Modifications," means the aggregate increases and/or decreases in cost plus applicable profits.

252.223-7004 DRUG-FREE WORK FORCE (SEP 1988)

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security; health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the objectives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing

shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, and efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing--

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employees has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2..1 of subpart B of the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11, 1988), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such times as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing program shall not apply to the extent that are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (APR 2002)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

- (1) Food.
- (2) Clothing.
- (3) Tents, tarpaulins, or covers.
- (4) Cotton and other natural fiber products.
- (5) Woven silk or woven silk blends.
- (6) Spun silk yarn for cartridge cloth.
- (7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.
- (8) Canvas products.
- (9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).
- (10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

- (1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;
- (2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--
 - (i) Is not more than 10 percent of the total price of the end product; and
 - (ii) Does not exceed the simplified acquisition threshold in FAR part 2;
- (3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced;
- (4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/ tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

252.227-7013 RIGHTS IN TECHNICAL DATA--NONCOMMERCIAL ITEMS.
(NOV 1995)

(a) Definitions. As used in this clause:

(1) Computer data base means a collection of data recorded in a form capable of being processed by a computer. The term does not include computer software.

(2) Computer program means a set of instructions, rules, or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

(3) Computer software means computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated, or recompiled. Computer software does not include computer data bases or computer software documentation.

(4) Computer software documentation means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

(5) Detailed manufacturing or process data means technical data that describe the steps, sequences, and conditions of manufacturing, processing or assembly used by the manufacturer to produce an item or component or to perform a process.

(6) Developed means that an item, component, or process exists and is workable. Thus, the item or component must have been constructed or the process practiced. Workability is generally established when the item, component, or process has been analyzed or tested sufficiently to demonstrate to reasonable people skilled in the applicable art that there is a high probability that it will operate as intended. Whether, how much, and what type of analysis or testing is required to establish workability depends on the nature of the item, component, or process, and the state of the art. To be considered "developed," the item, component, or process need not be at the stage where it could be offered for sale or sold on the commercial market, nor must the item, component, or process be actually reduced to practice within the meaning of Title 35 of the United States Code.

(7) Developed exclusively at private expense means development was accomplished entirely with costs charged to indirect cost pools, costs not allocated to a government contract, or any combination thereof.

(i) Private expense determinations should be made at the lowest practicable level.

(ii) Under fixed-price contracts, when total costs are greater than the firm-fixed-price or ceiling price of the contract, the additional development costs necessary to complete development shall not be considered when determining whether development was at government, private, or mixed expense.

(8) Developed exclusively with government funds means development was not accomplished exclusively or partially at private expense.

(9) Developed with mixed funding means development was accomplished partially with costs charged to indirect cost pools and/or costs not allocated to a government contract, and partially with costs charged directly to a government contract.

(10) Form, fit, and function data means technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.

(11) Government purpose means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.

(12) Government purpose rights means the rights to--

(i) Use, modify, reproduce, release, perform, display, or disclose technical data within the Government without restriction; and

(ii) Release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data for United States government purposes.

(13) Limited rights means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another party, except that the Government may reproduce, release or disclose such data or authorize the use or reproduction of the data by persons outside the Government if reproduction, release, disclosure, or use is--

(i) Necessary for emergency repair and overhaul; or

(ii) A release or disclosure of technical data (other than detailed manufacturing or process data) to, or use of such data by, a foreign government that is in the interest of the Government and is required for evaluational or informational purposes;

(iii) Subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and

(iv) The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.

(14) Technical data means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and/or management information.

(15) Unlimited rights means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.

(b) Rights in technical data. The Contractor grants or shall obtain for the Government the following royalty free, world-wide, nonexclusive, irrevocable license rights in technical data other than computer software documentation (see the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract for rights in computer software documentation):

(1) Unlimited rights.

The Government shall have unlimited rights in technical data that are--

(i) Data pertaining to an item, component, or process which has been or will be developed exclusively with Government funds;

(ii) Studies, analyses, test data, or similar data produced for this contract, when the study, analysis, test, or similar work was specified as an element of performance;

(iii) Created exclusively with Government funds in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes;

(iv) Form, fit, and function data;

(v) Necessary for installation, operation, maintenance, or training purposes (other than detailed manufacturing or process data);

(vi) Corrections or changes to technical data furnished to the Contractor by the Government;

(vii) Otherwise publicly available or have been released or disclosed by the Contractor or subcontractor without restrictions on further use, release or disclosure, other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party;

(viii) Data in which the Government has obtained unlimited rights under another Government contract or as a result of negotiations; or

(ix) Data furnished to the Government, under this or any other Government contract or subcontract thereunder, with--

(A) Government purpose license rights or limited rights and the restrictive condition(s) has/have expired; or

(B) Government purpose rights and the Contractor's exclusive right to use such data for commercial purposes has expired.

(2) Government purpose rights.

(i) The Government shall have government purpose rights for a five-year period, or such other period as may be negotiated, in technical data--

(A) That pertain to items, components, or processes developed with mixed funding except when the Government is entitled to unlimited rights in such data as provided in paragraphs (b)(ii) and (b)(iv) through (b)(ix) of this clause; or

(B) Created with mixed funding in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The five-year period, or such other period as may have been negotiated, shall commence upon execution of the contract, subcontract, letter contract (or similar contractual instrument), contract modification, or option exercise that required development of the items, components, or processes or creation of the data described in paragraph (b)(2)(i)(B) of this clause. Upon expiration of the five-year or other negotiated period, the Government shall have unlimited rights in the technical data.

(iii) The Government shall not release or disclose technical data in which it has government purpose rights unless-

(A) Prior to release or disclosure, the intended recipient is subject to the non-disclosure agreement at 227.7103-7 of the Defense Federal Acquisition Regulation Supplement (DFARS); or

(B) The recipient is a Government contractor receiving access to the data for performance of a Government contract that contains the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends.

(iv) The Contractor has the exclusive right, including the right to license others, to use technical data in which the Government has obtained government purpose rights under this contract for any commercial purpose during the time period specified in the government purpose rights legend prescribed in paragraph (f)(2) of this clause.

(3) Limited rights.

(i) Except as provided in paragraphs (b)(1)(ii) and (b)(1)(iv) through (b)(1)(ix) of this clause, the Government shall have limited rights in technical data--

(A) Pertaining to items, components, or processes developed exclusively at private expense and marked with the limited rights legend prescribed in paragraph (f) of this clause; or

(B) Created exclusively at private expense in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The Government shall require a recipient of limited rights data for emergency repair or overhaul to destroy the data and all copies in its possession promptly following completion of the emergency repair/overhaul and to notify the Contractor that the data have been destroyed.

(iii) The Contractor, its subcontractors, and suppliers are not required to provide the Government additional rights to use, modify, reproduce, release, perform, display, or disclose technical data furnished to the Government with limited rights. However, if the Government desires to obtain additional rights in technical data in which it has limited rights, the Contractor agrees to promptly enter into negotiations with the Contracting Officer to determine whether there are acceptable terms for transferring such rights. All technical data in which the Contractor has granted the Government additional rights shall be listed or described in a license agreement made part of the contract. The license shall enumerate the additional rights granted the Government in such data.

(4) Specifically negotiated license rights.

The standard license rights granted to the Government under paragraphs (b)(1) through (b)(3) of this clause, including the period during which the Government shall have government purpose rights in technical data, may be modified by mutual agreement to provide such rights as the parties consider appropriate but shall not provide the Government lesser rights than are enumerated in paragraph (a)(13) of this clause. Any rights so negotiated shall be identified in a license agreement made part of this contract.

(5) Prior government rights.

Technical data that will be delivered, furnished, or otherwise provided to the Government under this contract, in which the Government has previously obtained rights shall be delivered, furnished, or provided with the pre-existing rights, unless--

(i) The parties have agreed otherwise; or

(ii) Any restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose the data have expired or no longer apply.

(6) Release from liability.

The Contractor agrees to release the Government from liability for any release or disclosure of technical data made in accordance with paragraph (a)(13) or (b)(2)(iii) of this clause, in accordance with the terms of a license negotiated under paragraph (b)(4) of this clause, or by others to whom the recipient has released or disclosed the data and to seek relief solely from the party who has improperly used, modified, reproduced, released, performed, displayed, or disclosed Contractor data marked with restrictive legends.

(c) Contractor rights in technical data. All rights not granted to the Government are retained by the Contractor.

(d) Third party copyrighted data. The Contractor shall not, without the written approval of the Contracting Officer, incorporate any copyrighted data in the technical data to be delivered under this contract unless the Contractor is the copyright owner or has obtained for the Government the license rights necessary to perfect a license or licenses in the deliverable data of the appropriate scope set forth in paragraph (b) of this clause, and has affixed a statement of the license or licenses obtained on behalf of the Government and other persons to the data transmittal document.

(e) Identification and delivery of data to be furnished with restrictions on use, release, or disclosure. (1) This paragraph does not apply to restrictions based solely on copyright.

(2) Except as provided in paragraph (e)(3) of this clause, technical data that the Contractor asserts should be furnished to the Government with restrictions on use, release, or disclosure are identified in an attachment to this contract (the Attachment). The Contractor shall not deliver any data with restrictive markings unless the data are listed on the Attachment.

(3) In addition to the assertions made in the Attachment, other assertions may be identified after award when based on new information or inadvertent omissions unless the inadvertent omissions would have materially affected the source selection decision. Such identification and assertion shall be submitted to the Contracting Officer as soon as

practicable prior to the scheduled date for delivery of the data, in the following format, and signed by an official authorized to contractually obligate the Contractor:
Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data.

The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data should be restricted--

Technical data to be Furnished Asserting With Restrictions \1/ \4/	Asserted Basis for Assertion \2/	Name of Person Rights Category \3/ Restrictions
(LIST)	(LIST)	(LIST)
(LIST)		

\1/ If the assertion is applicable to items, components or processes developed at private expense, identify both the data and each such items, component, or process.

\2/ Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such items, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be restricted.

\3/ Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited or government purpose rights under this or a prior contract, or specifically negotiated licenses).

\4/ Corporation, individual, or other person, as appropriate.
Date

Printed Name and Title _____

Signature _____

(End of identification and assertion)

(4) When requested by the Contracting Officer, the Contractor shall provide sufficient information to enable the Contracting Officer to evaluate the Contractor's assertions. The Contracting Officer reserves the right to add the Contractor's assertions to the Attachment and validate any listed assertion, at a later date, in accordance with the procedures of the Validation of Restrictive Markings on Technical Data clause of this contract.

(f) Marking requirements. The Contractor, and its subcontractors or suppliers, may only assert restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data to be delivered under this contract by marking the deliverable data subject to restriction. Except as provided in paragraph (f)(5) of this clause, only the following legends are authorized under this contract: the government purpose rights legend at paragraph (f)(2) of this clause; the limited rights legend at paragraph (f)(3) of this clause; or the special license rights legend at paragraph (f)(4) of this clause; and/or a notice of copyright as prescribed under 17 U.S.C. 401 or 402.

(1) General marking instructions. The Contractor, or its subcontractors or suppliers, shall conspicuously and legibly mark the appropriate legend on all technical data that qualify for such markings. The authorized legends shall be placed on the transmittal document or storage container and, for printed material, each page of the printed material containing technical data for which restrictions are asserted. When only portions of a page of printed material are subject to the asserted restrictions, such portions shall be identified by circling, underscoring, with a note, or other appropriate identifier. Technical data transmitted directly from one computer or computer terminal to another shall contain a notice of asserted restrictions. Reproductions of technical data or any portions thereof subject to asserted restrictions shall also reproduce the asserted restrictions.

(2) Government purpose rights markings. Data delivered or otherwise furnished to the Government purpose rights shall be marked as follows:

Government Purpose Rights

Contract No. _____

Contractor Name _____

Contractor Address _____

Expiration Date _____

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(2) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. No restrictions

apply after the expiration date shown above. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(3) Limited rights markings. Data delivered or otherwise furnished to the Government with limited rights shall be marked with the following legend:

Limited Rights

Contract No.

Contractor Name

Contractor Address

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(3) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such data must promptly notify the above named Contractor.

(End of legend)

(4) Special license rights markings. (i) Data in which the Government's rights stem from a specifically negotiated license shall be marked with the following legend:

Special License Rights

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these data are restricted by Contract No. _____ (Insert contract number) _____, License No. _____ (Insert license identifier) _____. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(ii) For purposes of this clause, special licenses do not include government purpose license rights acquired under a prior contract (see paragraph (b)(5) of this clause).

(5) Pre-existing data markings. If the terms of a prior contract or license permitted the Contractor to restrict the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data deliverable under this contract, and those restrictions are still applicable, the Contractor may mark such data with the appropriate restrictive legend for which the data qualified under the prior contract or license. The marking procedures in paragraph (f)(1) of this clause shall be followed.

(g) Contractor procedures and records. Throughout performance of this contract, the Contractor and its subcontractors or suppliers that will deliver technical data with other than unlimited rights, shall--

(1) Have, maintain, and follow written procedures sufficient to assure that restrictive markings are used only when authorized by the terms of this clause; and

(2) Maintain records sufficient to justify the validity of any restrictive markings on technical data delivered under this contract.

(h) Removal of unjustified and nonconforming markings. (1) Unjustified technical data markings. The rights and obligations of the parties regarding the validation of restrictive markings on technical data furnished or to be furnished under this contract are contained in the Validation of Restrictive Markings on Technical Data clause of this contract. Notwithstanding any provision of this contract concerning inspection and acceptance, the Government may ignore or, at the Contractor's expense, correct or strike a marking if, in accordance with the procedures in the Validation of Restrictive Markings on Technical Data clause of this contract, a restrictive marking is determined to be unjustified.

(2) Nonconforming technical data markings. A nonconforming marking is a marking placed on technical data delivered or otherwise furnished to the Government under this contract that is not in the format authorized by this contract. Correction of nonconforming markings is not subject to the validation of Restrictive Markings on Technical Data clause of this contract. If the Contracting Officer notifies the Contractor of a nonconforming marking and the Contractor fails to remove or correct such marking within sixty (60) days, the Government may ignore or, at the Contractor's expense, remove or correct any nonconforming marking.

(i) Relation to patents. Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government under any patent.

(j) Limitation on charges for rights in technical data. (1) The Contractor shall not charge to this contract any cost, including, but not limited to, license fees, royalties, or similar charges, for rights in technical data to be delivered under this contract when--

(i) The Government has acquired, by any means, the same or greater rights in the data; or

(ii) The data are available to the public without restrictions.

(2) The limitation in paragraph (j)(1) of this clause--

(i) Includes costs charged by a subcontractor or supplier, at any tier, or costs incurred by the Contractor to acquire rights in subcontractor or supplier technical data, if the subcontractor or supplier has been paid for such rights under any other Government contract or under a license conveying the rights to the Government; and

(ii) Does not include the reasonable costs of reproducing, handling, or mailing the documents or other media in which the technical data will be delivered.

(k) Applicability to subcontractors or suppliers. (1) The Contractor shall ensure that the rights afforded its subcontractors and suppliers under 10 U.S.C. 2320, 10 U.S.C. 2321, and the identification, assertion, and delivery processes of paragraph (e) of this clause are recognized and protected.

(2) Whenever any technical data for noncommercial items is to be obtained from a subcontractor or supplier for delivery to the Government under this contract, the Contractor shall use this same clause in the subcontract or other contractual instrument, and require its subcontractors or suppliers to do so, without alteration, except to identify the parties. No other clause shall be used to enlarge or diminish the Government's, the Contractor's, or a higher-tier subcontractor's or supplier's rights in a subcontractor's or supplier's technical data.

(3) Technical data required to be delivered by a subcontractor or supplier shall normally be delivered to the next higher-tier contractor, subcontractor, or supplier. However, when there is a requirement in the prime contract for data which may be submitted with other than unlimited rights by a subcontractor or supplier, then said subcontractor or supplier may fulfill its requirement by submitting such data directly to the Government, rather than through a higher-tier contractor, subcontractor, or supplier.

(4) The Contractor and higher-tier subcontractors or suppliers shall not use their power to award contracts as economic leverage to obtain rights in technical data from their subcontractors or suppliers. (5) In no event shall the Contractor use its obligation to recognize and protect subcontractor or supplier rights in technical data as an excuse for failing to satisfy its contractual obligations to the Government.

252.227-7015 TECHNICAL DATA--COMMERCIAL ITEMS. (NOV 1995)

(a) Definitions. As used in this clause:

(1) "Commercial item" does not include commercial computer software.

(2) "Form, fit, and function data" means technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification

requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.

(3) The term "item" includes components or processes.

(4) "Technical data" means recorded information, regardless of the form or method of recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and/or management information.

(b) License. (1) The Government shall have the unrestricted right to use, modify, reproduce, release, perform, display, or disclose technical data, and to permit others to do so, that--

(i) Have been provided to the Government or others without restrictions on use, modification, reproduction, release, or further disclosure other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party;

(ii) Are form, fit, and function data;

(iii) Are a correction or change to technical data furnished to the Contractor by the Government;

(iv) Are necessary for operation, maintenance, installation, or training (other than detailed manufacturing or process data); or

(v) Have been provided to the Government under a prior contract or licensing agreement through which the Government has acquired the rights to use, modify, reproduce, release, perform, display, or disclose the data without restrictions.

(2) Except as provided in paragraph (b)(1) of this clause, the Government may use, modify, reproduce, release, perform, display, or disclose technical data within the Government only. The Government shall not--

(i) Use the technical data to manufacture additional quantities of the commercial items; or

(ii) Release, perform, display, disclose, or authorize use of the technical data outside the Government without the Contractor's written permission unless a release, disclosure or permitted use is necessary for emergency repair or overhaul of the commercial items furnished under this contract.

(c) Additional license rights. The Contractor, its subcontractors, and suppliers are not required to provide the Government additional rights to use, modify, reproduce, release, perform, display, or disclose technical data. However, if the Government desires to obtain

additional rights in technical data, the Contractor agrees to promptly enter into negotiations with the Contracting Officer to determine whether there are acceptable terms for transferring such rights. All technical data in which the Contractor has granted the Government additional rights shall be listed or described in a special license agreement made part of this contract. The license shall enumerate the additional rights granted the Government in such data.

(d) Release from liability. The Contractor agrees that the Government, and other persons to whom the Government may have released or disclosed technical data delivered or otherwise furnished under this contract, shall have no liability for any release or disclosure of technical data that are not marked to indicate that such data are licensed data subject to use, modification, reproduction, release, performance, display, or disclosure restrictions.

252.227-7016 RIGHTS IN BID OR PROPOSAL INFORMATION (JUN 1995)

(a) Definitions.

(1) For contracts that require the delivery of technical data, the terms "technical data" and "computer software" are defined in the Rights in Technical Data--Noncommercial Item clause of this contract or, if this is a contract awarded under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause of this contract.

(2) For contracts that do not require the delivery of technical data, the term "computer software" is defined in the Rights in Noncommercial Computer and Noncommercial Computer Software Documentation clause of this contract or, if this is a contract awarded under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause of this contract.

(b) Government rights to contract award. By submission of its offer, the Offeror agrees that the Government--

(1) May reproduce the bid or proposal, or any portions thereof, to the extent necessary to evaluate the offer.

(2) Except as provided in paragraph (d) of this clause, shall use information contained in the bid or proposal only for evaluational purposes and shall not disclose, directly or indirectly, such information to any person including potential evaluators, unless that person has been authorized by the head of the agency, his or her designee, or the Contracting Officer to receive such information.

(c) Government rights subsequent to contract award--The Contractor agrees--

(1) Except as provided in paragraphs (c)(2), (d), and (e) of this clause, the Government shall have the rights to use, modify, reproduce, release, perform, display, or disclose information contained in the Contractor's bid or proposal within the Government. The Government shall not release, perform, display, or disclose such information outside the Government without the Contractor's written permission.

(2) The Government's right to use, modify, reproduce, release, perform, display, or disclose information that is technical data or computer software required to be delivered under this contract are determined by the Rights in Technical Data--Noncommercial Items, Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, or Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause(s) of this contract.

(d) Government-furnished information. The Government's rights with respect to technical data or computer software contained in the Contractor's bid or proposal that were provided to the Contractor by the Government are subject only to restrictions on use, modification, reproduction, release, performance, display, or disclosure, if any, imposed by the developer or licensor of such data or software.

(e) Information available without restrictions. The Government's rights to use, modify, reproduce, release, perform, display, or, disclose information contained in a bid or proposal, including technical data or computer software, and to permit others to do so, shall not be restricted in any manner if such information has been released or disclosed to the Government or to other persons without restrictions other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the information to another party or the sale or transfer of some or all of a business entity or its assets to another party.

(f) Flowdown. Contractor shall include this clause in all subcontracts or similar contractual instruments and require its subcontractors or suppliers to do so without alteration, except to identify the parties.

252.227-7037 VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA. (SEP 199)

(a) Definitions. The terms used in this clause are defined in the Rights in Technical Data--Noncommercial Items clause of this contract.

(b) Contracts for commercial items--presumption of development at private expense. Under a contract for a commercial item, component, or process, the Department of Defense shall presume that a Contractor's asserted use or release restrictions are justified on the basis that the item, component, or process was developed exclusively at private expense. The Department shall not challenge such assertions unless information the

Department provides demonstrates that the item, component, or process was not developed exclusively at private expense.

(c) Justification. The Contractor or subcontractor at any tier is responsible for maintaining records sufficient to justify the validity of its markings that impose restrictions on the Government and others to use, duplicate, or disclose technical data delivered or required to be delivered under the contract or subcontract. Except under contracts for commercial items, the Contractor or subcontractor shall be prepared to furnish to the Contracting Officer a written justification for such restrictive markings in response to a challenge under paragraph (e) of this clause.

(d) Prechallenge request for information. (1) The Contracting Officer may request the Contractor or subcontractor to furnish a written explanation for any restriction asserted by the Contractor or subcontractor on the right of the United States or others to use technical data. If, upon review of the explanation submitted, the Contracting Officer remains unable to ascertain the basis of the restrictive marking, the Contracting Officer may further request the Contractor or subcontractor to furnish additional information in the records of, or otherwise in the possession of or reasonably available to, the Contractor or subcontractor to justify the validity of any restrictive marking on technical data delivered or to be delivered under the contract or subcontract (e.g., a statement of facts accompanied with supporting documentation). The Contractor or subcontractor shall submit such written data as requested by the Contracting Officer within the time required or such longer period as may be mutually agreed.

(2) If the Contracting Officer, after reviewing the written data furnished pursuant to paragraph (d)(1) of this clause, or any other available information pertaining to the validity of a restrictive marking, determines that reasonable grounds exist to question the current validity of the marking and that continued adherence to the marking would make impracticable the subsequent competitive acquisition of the item, component, or process to which the technical data relates, the Contracting Officer shall follow the procedures in paragraph (e) of this clause.

(3) If the Contractor or subcontractor fails to respond to the Contracting Officer's request for information under paragraph (d)(1) of this clause, and the Contracting Officer determines that continued adherence to the marking would make impracticable the subsequent competitive acquisition of the item, component, or process to which the technical data relates, the Contracting Officer may challenge the validity of the marking as described in paragraph (e) of this clause.

(e) Challenge.

(1) Notwithstanding any provision of this contract concerning inspection and acceptance, if the Contracting Officer determines that a challenge to the restrictive marking is warranted, the Contracting Officer shall send a written challenge notice to the Contractor or subcontractor asserting the restrictive markings. Such challenge shall--

- (i) State the specific grounds for challenging the asserted restriction;
 - (ii) Require a response within sixty (60) days justifying and providing sufficient evidence as to the current validity of the asserted restriction;
 - (iii) State that a DoD Contracting Officer's final decision, issued pursuant to paragraph (g) of this clause, sustaining the validity of a restrictive marking identical to the asserted restriction, within the three-year period preceding the challenge, shall serve as justification for the asserted restriction if the validated restriction was asserted by the same Contractor or subcontractor (or any licensee of such Contractor or subcontractor) to which such notice is being provided; and
 - (iv) State that failure to respond to the challenge notice may result in issuance of a final decision pursuant to paragraph (f) of this clause.
- (2) The Contracting Officer shall extend the time for response as appropriate if the Contractor or subcontractor submits a written request showing the need for additional time to prepare a response.
- (3) The Contractor's or subcontractor's written response shall be considered a claim within the meaning of the Contract Disputes Act of 1978 (41 U.S.C. 601, et seq.), and shall be certified in the form prescribed at 33.207 of the Federal Acquisition Regulation, regardless of dollar amount.
- (4) A Contractor or subcontractor receiving challenges to the same restrictive markings from more than one Contracting Officer shall notify each Contracting Officer of the existence of more than one challenge. The notice shall also state which Contracting Officer initiated the first in time unanswered challenge. The Contracting Officer initiating the first in time unanswered challenge after consultation with the Contractor or subcontractor and the other Contracting Officers, shall formulate and distribute a schedule for responding to each of the challenge notices to all interested parties. The schedule shall afford the Contractor or subcontractor an opportunity to respond to each challenge notice. All parties will be bound by this schedule.
- (f) Final decision when Contractor or subcontractor fails to respond. Upon a failure of a Contractor or subcontractor to submit any response to the challenge notice, other than a failure to respond under a contract for commercial items, the Contracting Officer will issue a final decision to the Contractor or subcontractor in accordance with the Disputes clause of this contract pertaining to the validity of the asserted restriction. This final decision shall be issued as soon as possible after the expiration of the time period of paragraph (e)(1)(ii) or (e)(2) of this clause. Following issuance of the final decision, the Contracting Officer will comply with the procedures in paragraphs (g)(2) (ii) through (iv) of this clause.
- (g) Final decision when Contractor or subcontractor responds.

(1) if the Contracting Officer determines that the Contractor or subcontractor has justified the validity of the restrictive marking, the Contracting Officer shall issue a final decision to the Contractor or subcontractor sustaining the validity of the restrictive marking, and stating that the Government will continue to be bound by the restrictive marking. This final decision shall be issued within sixty (60) days after receipt of the Contractor's or subcontractor's response to the challenge notice, or within such longer period that the Contracting Officer has notified the Contractor or subcontractor that the Government will require. The notification of a longer period for issuance of a final decision will be made within sixty (60) days after receipt of the response to the challenge notice.

(2)(i) If the Contracting Officer determines that the validity of the restrictive marking is not justified, the Contracting Officer shall issue a final decision to the Contractor or subcontractor in accordance with the Disputes clause of this contract. Notwithstanding paragraph (e) of the Disputes clause, the final decision shall be issued within sixty (60) days after receipt of the Contractor's or subcontractor's response to the challenge notice, or within such longer period that the Contracting Officer has notified the Contractor or subcontractor of the longer period that the Government will require. The notification of a longer period for issuance of a final decision will be made within sixty (60) days after receipt of the response to the challenge notice.

(ii) The Government agrees that it will continue to be bound by the restrictive marking of a period of ninety (90) days from the issuance of the Contracting Officer's final decision under paragraph (g)(2)(i) of this clause. The Contractor or subcontractor agrees that, if it intends to file suit in the United States Claims Court it will provide a notice of intent to file suit to the Contracting Officer within ninety (90) days from the issuance of the Contracting Officer's final decision under paragraph (g)(2)(i) of this clause. If the Contractor or subcontractor fails to appeal, file suit, or provide a notice of intent to file suit to the Contracting Officer within the ninety (90)-day period, the Government may cancel or ignore the restrictive markings, and the failure of the Contractor or subcontractor to take the required action constitutes agreement with such Government action.

(iii) The Government agrees that it will continue to be bound by the restrictive marking where a notice of intent to file suit in the United States Claims Court is provided to the Contracting Officer within ninety (90) days from the issuance of the final decision under paragraph (g)(2)(i) of this clause. The Government will no longer be bound, and the Contractor or subcontractor agrees that the Government may strike or ignore the restrictive markings, if the Contractor or subcontractor fails to file its suit within one (1) year after issuance of the final decision. Notwithstanding the foregoing, where the head of an agency determines, on a nondelegable basis, that urgent or compelling circumstances will not permit waiting for the filing of a suit in the United States Claims Court, the Contractor or subcontractor agrees that the agency may, following notice to the Contractor or subcontractor, authorize release or disclosure of the technical data. Such agency determination may be made at any time after issuance of the final decision and will not affect the Contractor's or subcontractor's right to damages against the United

States where its restrictive markings are ultimately upheld or to pursue other relief, if any, as may be provided by law.

(iv) The Government agrees that it will be bound by the restrictive marking where an appeal or suit is filed pursuant to the Contract Disputes Act until final disposition by an agency Board of Contract Appeals or the United States Claims Court. Notwithstanding the foregoing, where the head of an agency determines, on a nondelegable basis, following notice to the Contractor that urgent or compelling circumstances will not permit awaiting the decision by such Board of Contract Appeals or the United States Claims Court, the Contractor or subcontractor agrees that the agency may authorize release or disclosure of the technical data. Such agency determination may be made at any time after issuance of the final decision and will not affect the Contractor's or subcontractor's right to damages against the United States where its restrictive markings are ultimately upheld or to pursue other relief, if any, as may be provided by law.

(h) Final disposition of appeal or suit. (1) If the Contractor or subcontractor appeals or files suit and if, upon final disposition of the appeal or suit, the Contracting Officer's decision is sustained--

(i) The restrictive marking on the technical data shall be cancelled, corrected or ignored; and

(ii) If the restrictive marking is found not to be substantially justified, the Contractor or subcontractor, as appropriate, shall be liable to the Government for payment of the cost to the Government of reviewing the restrictive marking and the fees and other expenses (as defined in 28 U.S.C. 2412(d)(2)(A)) incurred by the Government in challenging the marking, unless special circumstances would make such payment unjust.

(2) If the Contractor or subcontractor appeals or files suit and if, upon final disposition of the appeal or suit, the Contracting Officer's decision is not sustained--

(i) The Government shall continue to be bound by the restrictive marking; and

(ii) The Government shall be liable to the Contractor or subcontractor for payment of fees and other expenses (as defined in 28 U.S.C. 2412(d)(2)(A)) incurred by the Contractor or subcontractor in defending the marking, if the challenge by the Government is found not to have been made in good faith.

(i) Duration of right to challenge. The Government may review the validity of any restriction on technical data, delivered or to be delivered under a contract, asserted by the Contractor or subcontractor. During the period within three (3) years of final payment on a contract or within three (3) years of delivery of the technical data to the Government, whichever is later, the Contracting Officer may review and make a written determination to challenge the restriction. The Government may, however, challenge a restriction on the release, disclosure or use of technical data at any time if such technical data--

- (1) Is publicly available;
- (2) Has been furnished to the United States without restriction; or
- (3) Has been otherwise made available without restriction. Only the Contracting Officer's final decision resolving a formal challenge by sustaining the validity of a restrictive marking constitutes "validation" as addressed in 10 U.S.C. 2321.
- (j) Decision not to challenge. A decision by the Government, or a determination by the Contracting Officer, to not challenge the restrictive marking or asserted restriction shall not constitute "validation."
- (k) Privity of contract. The Contractor or subcontractor agrees that the Contracting Officer may transact matters under this clause directly with subcontractors at any tier that assert restrictive markings. However, this clause neither creates nor implies privity of contract between the Government and subcontractors.
- (l) Flowdown. The Contractor or subcontractor agrees to insert this clause in contractual instruments with its subcontractors or suppliers at any tier requiring the delivery of technical data, except contractual instruments for commercial items or commercial components.

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD) (MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
TOTAL		

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

PART III
LIST OF DOCS, EXHIBITS AND ATTACHMENTS
SECTION J

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**PART III
LIST OF DOCS, EXHIBITS AND ATTACHMENTS
SECTION J**

J01 CONTRACT AND REFERENCE DRAWINGS

The following drawings shall form a part of this solicitation. Please note that Drawings will be provided to the successful bidder in electronic file form:

CLIN 0001

A. Contract Drawings

Drawing No. 665-A205-01, OUTBOARD PROFILE
Drawing No. 665-A215-01, GENERAL ARRANGEMENTS, 2-SHEETS
Drawing No. 665-A437-01, OUTFITTING & FURNISHINGS
Drawing No. 665-A720-01, ONE LINE DIAGRAM, 3-SHEETS

B. Reference Drawings

Drawing No. 526-D307-01, SHELL PLATING & FRAMING, 2-SHEETS
Drawing No. 526-D308-01, DECK PLATING & FRAMING
Drawing No. 526-D309-01, TRANSVERSE FRAMING
Drawing No. 526-D311-01, LONGITUDINAL FRAMING
Drawing No. 526-D320-01, TANKS
Drawing No. 526-D420-01, DECK FITTINGS
Drawing No. 526-D550-01, SPUDS
Drawing No. 526-D552-01, SPUDWELLS
Drawing No. 665-A720-02, DC ONE LINE DIAGRAM
Drawing No. 577-D325-01, SEACHEST INSTALLATION & DETAILS

CLIN 0002

A. Contract Drawings

Drawing No. 537-D105-01, HULL LINES
Drawing No. 537-D215-01, GENERAL ARRANGEMENTS
Drawing No. 537-D305-01, DECK SCANTLINGS
Drawing No. 537-D305-02, BOTTOM SCANTLINGS
Drawing No. 537-D307-01, SIDE SHELL SCANTLINGS
Drawing No. 537-D309-01, TRANSVERSE FRAMES
Drawing No. 537-D311-01, RAKE STRUCTURAL DETAILS
Drawing No. 537-D427-01, MISCELLANEOUS DETAILS

B. Reference Drawings

Drawing No. 667-A499-01, TIE DOWN MAXIMUM ANGLE

J02 ENG FORM 2454

The Contractor shall utilize the ENG Form 2454 for the Construction Plan required by Clause H06.

[illegible]

J03 SUBCONTRACTING PLANSMALL, HUBZONE SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED
SMALL BUSINESS SUBCONTRACTING PLAN

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

SOLICITATION OR CONTRACT NUMBER: _____

ITEM/SERVICE: _____

The following, together with any attachments, is hereby submitted as a Subcontracting Plan to satisfy the applicable requirements of Public Law 95-507 as implemented by OFPP Policy Letter 80-2.

1. (a) The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract cited above or to the contract awarded under the solicitation cited.

(i) Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns.

(ii) HUBZone Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns located in a historically underutilized business zone which is an area located within one or more qualified census tracts, qualified nonmetropolitan counties, or lands within the external boundaries of an Indian reservation and appear on the List of Qualified HUBZone Small Business Concerns maintained by the SBA. (<http://www.sba.gov/hubzone/>).

(iii) Small Disadvantaged Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small concerns owned and controlled by socially and economically disadvantaged individuals. This percentage is included in the percentage shown under 1.(a)(i) above, as a subset.

(iv) Women-Owned Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are women-owned small business concerns. This percentage is included in the percentage shown under 1.(a)(i) above, as a subset.

- (b) The following dollar values correspond to the percentage goals shown in (a) above.

(i) Total dollars planned to be subcontracted to small business concerns:
\$ _____.

(ii) Total dollars planned to be subcontracted to HUBZone small business concerns:
\$ _____.

(iii) Total dollars planned to be subcontracted to small disadvantaged business concerns: \$ _____. This dollar amount is included in the amount shown under 1.(b)(i) above, as a subset.

(iv) Total dollars planned to be subcontracted to women-owned small business concerns: \$ _____. This dollar amount is included in the amount shown under 1.(b)(i) above, as a subset.

(c) The total estimated dollar value of all planned subcontracting (to all types of business concerns) under this contract is \$ _____.

(d) The following principal products and/or services will be subcontracted under this contract, and the distribution among small, HUBZone small business, small disadvantaged, and women-owned small business concerns is as follows:

(Products/services planned to be subcontracted to small business concerns are identified by *, to HUBZone small business concerns by **, to small disadvantaged business concerns by *** and women-owned small business concerns by ****)

(Attachment may be used if additional space is required)

(e) The following method was used in developing subcontract goals (i.e., statement explaining how the product and service areas to be subcontracted were established, how the areas to be subcontracted to small, HUBZone small, small disadvantaged, and women-owned small business concerns were determined, and how small, HUBZone small, small disadvantaged, and women-owned small business concerns capabilities were determined, to include identification of source lists utilized in making those determination).

(f) Indirect and over head costs [_____] have [_____] have not been included in the goals specified in 1(a) and 1(b).

(g) If “have” is checked, explain the method used in determining the proportionate share of indirect and overhead cost to be allocated as subcontracts to small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

2. The following individual will administer the subcontracting program:

Name: _____

Address & Telephone: _____

Telephone: _____

This individual's specific duties, as they relate to the firm's subcontracting program are as follows:

General overall responsibility for this company's Small Business Program, the development, preparation and execution of individual subcontracting plans and for monitoring performance relative to contractual subcontracting requirements contained in this plan, including but not limited to:

(a) Developing and maintaining bidders lists of small, HUBZone small, small disadvantaged, and women-owned small business concerns from all possible sources.

(b) Ensuring that procurement packages are structured to permit small, HUBZone small, small disadvantaged, and women-owned business concerns to participate to the maximum extent possible.

(c) Assuring inclusion of small, HUBZone small, small disadvantaged, and women-owned business concerns in all solicitations for products or services which they are capable of providing.

(d) Reviewing solicitations to remove statements, clauses, etc., which may tend to restrict or prohibit small, HUBZone small, small disadvantaged, and women-owned business participation.

(e) Ensuring periodic rotation of potential subcontractors on bidders lists.

(f) Ensuring that the bid proposal review board documents its reasons for rejecting low bids submitted by small, HUBZone small, small disadvantaged, and women-owned business concerns.

(g) Ensuring the establishment and maintenance of records of solicitations and subcontract award activity.

(h) Attending or arranging for attendance of company counselors at Business Opportunity Workshops, Minority Business Enterprise Seminars, Trade Fairs, etc.

(i) Conducting or arranging for conduct of motivational training for purchasing personnel pursuant to the intent of P.O. 95-507.

(j) Monitoring attainment of proposed goals.

(k) Preparing and submitting periodic subcontracting reports required.

(l) Coordinating contractor's activities during the conduct of compliance reviews by Federal Agencies.

(m) Coordinating the conduct of contractor's activities involving its small, HUBZone small, small disadvantaged, and women-owned business subcontracting program.

(n) Additions to (or deletions from) the duties specified above are as follows:

3. The following efforts will be taken to assure that small, HUBZone, small, small disadvantaged, and women-owned business concerns will have an equitable opportunity to compete for subcontracts:

(a) Outreach efforts will be made as follows:

- (i) Contacts with minority and small business trade associations
- (ii) Contacts with business development organizations
- (iii) Attendance at small and minority business procurement conferences
- (iv) Sources will be requested from SBA's PASS system.

(b) The following internal efforts will be made to guide and encourage buyers:

- (i) Workshops, seminars and training programs will be conducted
- (ii) Activities will be monitored to evaluate compliance with this subcontracting plan.

(c) Small, HUBZone small, small disadvantaged, and women-owned business concern source lists, guides and other data identifying small, HUBZone small, small disadvantaged, and women-owned business concerns will be maintained and utilized by buyers in soliciting subcontracts.

(d) Additions to (or deletions from) the above listed efforts are as follows:

4. The bidder (contractor) agrees that the clause entitled Utilization of Small, HUBZone Small, Small Disadvantaged, and Women-Owned Small Business Concerns will be included in all subcontracts which offer further subcontracting opportunities, and all subcontractors except small business concerns who receive subcontracts in excess of \$500,000 will be required to adopt and comply with a subcontracting plan similar to this one. Such plans will be reviewed by comparing them with the provisions of Public Law 95-507, and assuring that all minimum requirements of an acceptable subcontracting plan have been satisfied. The acceptability of percentage goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of potential small, HUBZone small, small disadvantaged, and women-owned subcontractors, and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports, and/or, as time and availability of funds permit, periodic visits to subcontractors facilities to review applicable records and subcontracting program progress.

5. The bidder (contractor) agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the contracting agency or the Small business Administration in order to determine the extent of compliance by the bidder with the subcontracting plan and with the clause entitled Utilization of Small, HUBZone Small, Small Disadvantaged, and Women-Owned Small Business Concerns, contained in the contract.

6. The bidder (contractor) agrees that he will maintain at least the following types of records to document compliance with this subcontracting plan:

(a) Small, HUBZone Small, Small Disadvantaged, and Women-Owned Business concern source lists, guides and other data identifying SB/HZSB/SDB/WO vendors.

(b) Organizations contacted for small, HUBZone small, small disadvantaged, and women-owned business sources.

(c) On a contract-by-contract basis, records on all subcontract solicitations over \$100,000, indicating on each solicitation (1) whether small business concerns were solicited, and if not, why not; (2) whether HUBZone small business concerns were solicited, and if not, who not; (3) whether small disadvantaged business concerns were solicited, and if not, why not; (4) whether women-owned business concerns were solicited and if not, why not; and (5) reasons for the failure of solicited small, HUBZone small, small disadvantaged, or women-owned business concerns to receive the subcontract award.

(d) Records to support other outreach efforts: Contacts with Minority and Small Business

Trade Associations, etc. Attendance at small and minority business procurement conferences and trade fairs.

(e) Records to support internal activities to guide and encourage buyers: Workshops, seminars, training programs, etc. Monitoring activities to evaluate compliance.

(f) On a contract-by-contract basis, records to support subcontract award data to include name and address or subcontractor .

(g) Records to be maintained in addition to the above are as follows:

Signed: _____

Typed Name: _____

Title: _____

Date: _____

Plan Accepted By: _____
Contracting Officer

Date: _____

NOTE TO CONTRACTING OFFICER: Upon incorporation of a plan into the contract, indicate herein the estimated dollar value of the contract:

\$ _____.

J04 PERFORMANCE EVALUATION FOR SERVICE & SUPPLY CONTRACTS

In accordance with FAR 42.15, AFAR 42.15, and Army Acquisition Letter 98-1, this contract action is subject to the requirement for Contractor performance evaluation in the elements listed on the attached form.

At a minimum, the performance evaluation shall be completed within 45 days of completion of each year's performance. Additional (Interim) evaluations may be prepared if any element listed is being performed unsatisfactorily.

The period of evaluation will begin on the date of acknowledgment of receipt of the Notice to Proceed and will run concurrent with the performance period of the contract.

The Contractor shall be provided thirty (30) days to submit comments, rebut statements, or provide additional information before the final performance evaluation is issued. This period may be shortened if an interim unsatisfactory evaluation is being contemplated and time does not allow for a full thirty (30) days.

The Contractor may appeal a final performance evaluation to the Commander of the Contracting Activity. The appeal must be made within thirty (30) days, and must be a written request to the Contracting Officer stating the reasons why a further review of their performance evaluation is justified, and the circumstances which may be cause the Government to revise its performance rating. Interim evaluations are not subject to appeal.

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Performance Assessment Report (PAR)

- ☐ Interim
☐ Final
☐ Addendum

Period Report: From _____ To _____

Section I

1a. Contractor: Address: Place of Performance: 1b. Cage Code: 1c. DUNS No.:	2a. Contract Number: 2b. Modification Number: 2c. Del/Task Order Number: 2d. Initial Value (Base + Options): \$ 2e. Current Value: \$ 3a. Award Date: 3b. Completion Date:
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Section II

4a. Contractor POC: Name: Position/Title: Address: Phone No.: FAX: E-Mail Address:	4b. Gov't Contract Specialist: Name: Address: Phone No.: FAX: E-mail Address:
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Section III

5. Method of Contract: <input type="checkbox"/> Sealed Bid <input type="checkbox"/> Negotiated				
6. Type of Contract: (Check all that apply)				
<input type="checkbox"/> FFP	<input type="checkbox"/> FPR[R]	<input type="checkbox"/> CS	<input type="checkbox"/> CPFF[T]	<input type="checkbox"/> Rqmts
<input type="checkbox"/> FFP-EPA	<input type="checkbox"/> FFP-LOE	<input type="checkbox"/> CPIF	<input type="checkbox"/> Labor Hour	<input type="checkbox"/> BOA
<input type="checkbox"/> FPIF	<input type="checkbox"/> T&M	<input type="checkbox"/> CPAF	<input type="checkbox"/> ID	<input type="checkbox"/> Letter
<input type="checkbox"/> FPR[P]	<input type="checkbox"/> CR	<input type="checkbox"/> CPFF[C]	<input type="checkbox"/> IQ	<input type="checkbox"/> Other
7. Socio-economic Program:				
<input type="checkbox"/> SBSA	<input type="checkbox"/> 8(a)	<input type="checkbox"/> SBIR	<input type="checkbox"/> SBCDP	<input type="checkbox"/> Other
8. Competition:				
<input type="checkbox"/> Full and Open Competition		<input type="checkbox"/> Sole Source	<input type="checkbox"/> Other	
9. Type of Supply/Services:				
<input type="checkbox"/> Commercial		<input type="checkbox"/> Non-Developmental	<input type="checkbox"/> Non-Commercial	

Section IV

10. Business Sector:		
<input type="checkbox"/> Space	<input type="checkbox"/> Ground Vehicles	<input type="checkbox"/> Information Technology
<input type="checkbox"/> Ordnance	<input type="checkbox"/> Shipbuilding	<input type="checkbox"/> Science & Technology
<input type="checkbox"/> Aircraft	<input type="checkbox"/> Other Systems	<input type="checkbox"/> Services
<input type="checkbox"/> Training System	<input type="checkbox"/> Operations Support	<input type="checkbox"/> Health Care Services
11a. FSCs:		
11b. SICs:		

12. Description of Requirement:

Section V

(All business Sectors other than Systems)

The rating assigned to an element/sub-element must be supported by narrative rationale. Narratives are required for all ratings, and must clearly convey to the contractor, as well as to a Government source selection official who is not familiar with the instant contract, why the rating was assigned. This is especially important for any rating above or below "satisfactory." Narratives should be supported by quantifiable or verifiable documentation. While larger or more complex efforts warrant greater detail, the guideline for any narrative is "clear and concise."

14a. Quality of Product/Service

Rating: (check one)

Narrative rationale: _____

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

14b. Schedule

Rating: (check one)

Narrative rationale: _____

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

14c. Cost Control

Rating: (check one)

Narrative rationale: _____

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

14d. Business Relations

Rating: (check one)

Narrative rationale: _____

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

14e. Management of Key Personnel

Rating: (check one)

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

Narrative rationale: _____

14f. Other (Optional)

Rating: (check one)

- ☐ Exceptional
- ☐ Very Good
- ☐ Satisfactory
- ☐ Marginal
- ☐ Unsatisfactory

Narrative rationale: _____

Section VI

15. Evaluator

Name:
Phone:
FAX:
E-Mail:

Signature: _____

Date Approved by Evaluator: _____

16. Contracting Officer/PM

Name:
Phone:
FAX:
E-Mail:

Signature: _____

Date Approved by Evaluator: _____

17. Agency Review

Name:
Phone:
FAX:
E-Mail:

Signature: _____

Date Approved by Evaluator: _____

18. Contractor Review

Name:
Position/Title:
Phone:
FAX:
E-Mail:

Comments provided?

- ☐ Yes If YES, indicate number of
☐ No pages attached ()

Date of Receipt of
Contractor Response: _____

19. Resolution Authority

Name:
Phone:
FAX:
E-Mail:

Date Referred: _____

Date of Resolution: _____

20. Source Selection Availability

Date of Final Review: _____

Date PAR entered into PPIMS: _____

Section K - Representations, Certifications and Other Statements of Offerors

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(c) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(b) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision

_____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(d) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

52.215-6 PLACE OF PERFORMANCE (OCT 1997)

(a) The offeror or respondent, in the performance of any contract resulting from this solicitation, () intends, () does not intend (check applicable block) to use one or more plants or facilities located at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks “intends” in paragraph (a) of this provision, it shall insert in the following spaces the required information:

Place of Performance(Street Address, City, State, County, Zip Code)	Name and Address of Owner and Operator of the Plant or Facility if Other Than Offeror or Respondent

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) -
ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 336611.

(2) The small business size standard is 1000 employees.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

_____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

- (a) () It has, () has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;
- (b) () It has, () has not, filed all required compliance reports; and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

- (a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.
- (b) By signing this offer, the offeror certifies that--
 - (1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42

U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

() (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

() (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

() (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

() (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

() (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's

securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

- (ii) Holding a management position in the firm, such as a director or officer;
- (iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;
- (iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or
- (v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

- (1) Identification of each government holding a significant interest; and
- (2) A description of the significant interest held by each government.

252.227-7028 TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)

The Offeror shall attach to its offer an identification of all documents or other media incorporating technical data or computer software it intends to deliver under this contract with other than unlimited rights that are identical or substantially similar to documents or other media that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The attachment shall identify--

- (a) The contract number under which the data or software were produced;

(b) The contract number under which, and the name and address of the organization to whom, the data or software were most recently delivered or will be delivered; and

(c) Any limitations on the Government's rights to use or disclose the data or software, including, when applicable, identification of the earliest date the limitations expire.

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA
(AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

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SECTION L

Instructions, Conditions and Notices to Bidders

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L-1 CLAUSES INCORPORATED BY FULL TEXT

The following clauses, with original paragraph numbering, are extracted from the Federal Acquisition Rules (FAR).

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) Definitions. As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer’s discretion, result in the offeror being allowed to revise its proposal.

In writing, writing, or written means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation’s closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals.

(1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages

(i) Addressed to the office specified in the solicitation, and

(ii) Showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with--the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award.

(1) The Government intends to award a contract, or contracts, resulting from this solicitation to the responsible offeror(s) whose proposal(s) represent the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or sub-line items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in post award debriefings to other offerors:

(i) The overall evaluated cost or price and technical rating of the successful offeror;

(ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;

(iii) A summary of the rationale for award; and

(iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm, fixed price contract resulting from this solicitation.

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Robert Sharamatew, Contracting Officer
US Army Engineer District, Philadelphia
100 Penn Square East, Rm 643
Wanamaker Building
Philadelphia, PA 19107-3390

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-2 PROPOSAL REQUIREMENTS AND EVALUATION CRITERIA**A. GENERAL REQUIREMENTS**

Offerors shall submit three copies of the entire Proposal for evaluation. The Proposal shall include an index of the complete Proposal to identify the content, and to assist in locating the specific elements or topics required to be addressed by the offerors as outlined in this Section. Page separators or tabs can be used.

Page B-1 of the Solicitation must be filled in and included with the Proposal to reflect the offered price. This page is the Price Proposal, and must be separate or separable from the rest. Price information shall only be displayed on page B-1 and shall not be included anywhere else within the Proposal, to allow for the review by the Government representatives to take place without the influence of price.

The offerors are advised that each Proposal submitted must be complete, and shall be organized to address the specific elements or topics required, in the sequence outlined in this Section. This is necessary to facilitate and expedite an effective review.

Offerors that submit Proposals that are not complete, may or may not be given the opportunity to submit any additional material, and may be considered non-responsive. As a minimum, the information required in this Section shall be included in each Proposal submitted. Additional data, which would serve to clarify the Proposal, should also be submitted. Any other information deemed necessary by the Contracting Officer for a clear understanding of the Proposal shall be furnished if requested.

Proposals shall not include alternative features offered as options within the Proposal. Each Proposal must be clear as to the services and features to be offered without contingency. This will facilitate a fair and equitable review and evaluation. The same offeror, however, may send in more than one complete Proposal, to propose alternative features and price.

The Proposals will be reviewed for completeness and evaluated on their merit against the evaluation factors listed below.

Technical Factors:

Past Performance and Experience,
Management
Product

Price Factor:

Price Reasonableness
Price Realism

The technical factors as a whole are more important than price. However, price remains a significant factor in determining "Best Value." The technical sub-factors are listed in descending order. The price sub-factors are of equal weighting.

B. PAST PERFORMANCE AND EXPERIENCE EVALUATION CRITERIA

Past Performance means:

- The offeror's rating in formalized Government or customer surveys, including the Government's assessment of performance in any previous contracts if applicable.
- Contracts terminated by convenience of the Government in the past three years, and/or Contracts terminated for default in the past 5 years shall be reported if applicable.
- Demonstrated experience during the past five years in construction of vessels of similar type and equivalent level of complexity will be evaluated.

The Government may at its discretion contact representatives of customers to obtain input pertaining to past performance.

C. REQUIRED PAST PERFORMANCE AND EXPERIENCE SUBMITTALS

The offeror shall provide a discussion of the organization's Past Performance, making reference to ratings in formalized Government or customer surveys as applicable. If applicable, list any Contract that was terminated for the convenience of the Government within the past three years and any Contract that was terminated for default in the last 5 years. Explain the circumstances. If none, please so indicate.

The offeror shall also provide a discussion of the organization's experience on similar types of work over the past five years, describing the work done (vessel type), the principal dimensions of the vessels built, and the list of customers. The information presented shall include; customer name / organization, points of contact with phone numbers, contract number, and approximate contract value.

D. MANAGEMENT EVALUATION CRITERIA

The Management Evaluation Criteria for Award shall be the capability demonstrated by the offeror to successfully perform and respond to the requirements of this project.

The offeror shall demonstrate in the Proposal that the organization has the proper resources available, and has proposed sufficient resources to successfully perform the work required.

The Government may elect to visit offerors facilities to verify proposal information.

E. REQUIRED MANAGEMENT PROPOSAL SUBMITTALS

The following topics must be addressed in narrative form. Drawings or pictures to convey the information are encouraged. Each topic shall be addressed to the degree necessary to provide the reviewers with a clear understanding. As a minimum the information requested below shall be included in each Proposal submitted:

E1. Organization

The offeror shall provide clear and complete information on the organization as follows:

- Name and type of company.
- Brief history of company.
- Principal ownership, subsidiaries, and corporate affiliations.
- Source of engineering design support.

E2. Human Resources for this Project

The offeror shall furnish resumes of the key personnel that will be involved in this project, indicating:

- Academic/Professional qualifications.
- Experience in related type of work.
- Functional position and job description as it will apply to this project, for each key individual.
- Engineering experience and certification of those providing engineering design services.

E3. Facilities and Equipment

The offeror shall furnish a description of the facilities and major equipment available and planned to be used on this project. Shop facilities/equipment shall be briefly described and clearly identified in layout drawings or pictures included in the Proposal.

E4. Project Sub-Contracting Plan

If applicable, the offeror shall describe the extent of sub-Contracting contemplated on this project, and the specific areas to be sub-Contracted.

If any part of Phase I – Engineering & Scheduling, is to be sub-Contracted, the offeror shall identify the sub-Contractor, and submit the resumes of the key personnel involved.

E5. Project Quality Control Plan

The offeror shall make a brief description of the organization's Quality Control/Quality Assurance Organization, and how it will be applied to this project. Copy of ISO certification shall be provided if applicable.

E6. Project Planning / Schedule

The offeror shall submit with the Proposal, a Plan of Action and Project Schedule, including duration in calendar days for performance during:

- Phase I - Engineering and Scheduling
- Phase II - Construction, Testing and Delivery

The planning and scheduling information, shall demonstrate a logical, orderly and workable approach to the Project and the Contract.

Phase durations, as identified in the accepted Proposal, will be inserted into the Contract Phase Sequencing included in Section H, clause H01. Offered durations must be submitted in calendar day format, and shall not exceed those indicated in page H-5.

The Government will give Notice to Proceed with Phase II, within 30 days of completion of Phase I – Engineering & Scheduling.

After Contract Award, the Contractor is required to perform according to their proposed Project Schedule. Actual performance after Contract Award shall be compared against the proposed schedule, and shall be reported monthly to the COR with the Progress Payment request for approval.

Offerors proposing a total project duration that is shorter than the baseline project duration shown on page H-5 will NOT be rated better for this criteria than offerors not proposing a reduced schedule duration. Offerors should refer to the Contract Phase Sequencing graphic for important information regarding Government review durations and required resubmittal durations that must be included in the total project duration proposed by the offeror.

E7. Financial Condition

Describe why the Government should be confident that this project will be successfully completed from a financial standpoint. Report briefly on the offeror's financial resources and cash flow.

F. PRODUCT EVALUATION CRITERIA

The criteria for Product Evaluation of the Proposals is based on the assessment of the offered deliverables, equipment and features to provide quality, safety, performance and reliability in the proposed vessels.

G REQUIRED PRODUCT PROPOSAL SUBMITTALS**G1. List of Proposed Deliverables**

The purpose of this submittal is for the Government to evaluate the completeness and extent of the engineering drawings and data that will be furnished prior to during the engineering phase of the contract and prior to construction. The Offeror shall furnish a list of the drawings and engineering data that will be developed and provided to the government after contract award, during the Engineering Phase of the contract. See Clause H-13 for guidance.

G2. Major Equipment

The Offeror shall provide a brief description (including make, model, and optional features) of the generator, spud winches, and air compressor, that may clarify the Proposal, and demonstrate quality, enhanced safety, improved performance and reliability of the proposed vessels.

G3. Preliminary Drawings

The offeror shall provide a refinement of the Governments RFP for the Excavator Barge drawings at larger scale based upon preliminary engineering and specific equipment offered. Major equipment selected by the contractor shall be shown to scale and as it will be located by outline of assembly. The following preliminary drawings shall be provided:

- **665-B205-001 OUTBOARD PROFILE**
- **665-B215-001 GENERAL ARRANGEMENTS** – The drawing shall include plan views of the hold, main deck and above, as required.

The intent is for offerors to refine the Governments RFP contract drawings based on their proposal preliminary engineering and specific selections of equipment, options and other features. The CAD files of the drawings, are posted as zip files on the Philadelphia District electronic bid sets web site <https://ebs.nap.usace.army.mil> and are accessible for downloading from issue date to due date of the RFP. The offeror is not be required to provide a refinement of the Governments RFP drawings for the deck cargo barge.

G4. Preliminary Calculations

It is anticipated that the offeror will perform some initial engineering and calculations in developing their price proposal. One likely example would be basic scantling calculations to check preliminary strength and stability of the vessel.

The offeror may furnish any background information pertaining to the Excavator Barge that may further identify specifics of the vessel that will be provided. The Government in its determination of best value will use such information, where more technical definition generally equates to less risk.

H. PRICE EVALUATION CRITERIA

The Price Evaluation Criteria for Award is "Price Reasonableness". The competitiveness of the Offeror's Price Proposal, (page B-1) will be evaluated taking into consideration the most probable price of doing business with the Offeror, based on the merits of "Past Performance and Experience", "Product" and "Management".

Price Realism will be evaluated to preclude financially front loading the contract and to assure that a mathematical imbalance between the price of the three phases does not exist. An award will not be made to an Offeror with an unbalanced offer.

I. REQUIRED PRICE SUBMITTALS**II. Price Proposal**

A price for the work outlined in this RFP for the two phases and for the entire job shall be provided with the Proposal by filling in page B-1 of this Solicitation. Note that page B-1 must be returned with the Proposal in separate, or be separable from the rest of the Proposal.

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION M

EVALUATION FACTORS FOR AWARD

The Government intends to award a contract on the basis of "Best Value". The Government will award a contract resulting from this solicitation to the responsible Offeror whose proposal, conforming to the solicitation, will be most advantageous to the Government.

The proposals will be reviewed for completeness against the content requirements outlined in Section L, and evaluated against the evaluation factors listed below:

Technical Factors:

Past Performance and experience,
Management
Product

Price Factor:

Price Reasonableness
Price Realism

The technical factors as a whole are more important than price. However, price remains a significant factor in determining "Best Value." The technical sub-factors are listed in descending order. The price sub-factors are of equal weighting.

Further discussion of these factors, format and specific topics to be addressed in the proposal, are listed and described in Section L, "Instructions, Conditions, and Notices to Offerors", which contains the specific proposal submittal requirements pursuant to this Solicitation. Offerors are advised that each proposal submitted shall be complete and in the format required, with information organized as specified in Section L.

Furthermore, each Proposal shall be compatible with Section C - Description / Specification.

All Proposals will be reviewed initially for Proposal submittal compliance and for compliance with the requirements of the technical specifications in Section "C".

The Government may award a contract on the basis of initial proposals received without discussions; therefore, each initial proposal should contain the Offeror's best terms.

The Government reserves the right to award the contract to the Offeror whose proposal is not the lowest in price.

Award shall be made to a single Offeror.

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